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HOW TO COMPILE

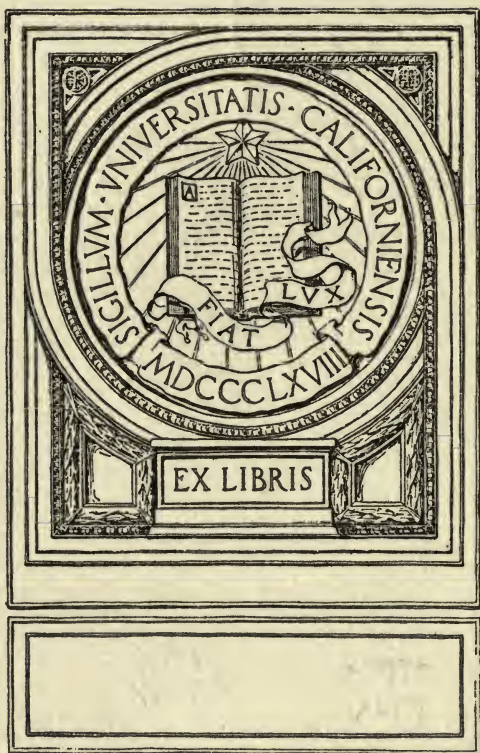
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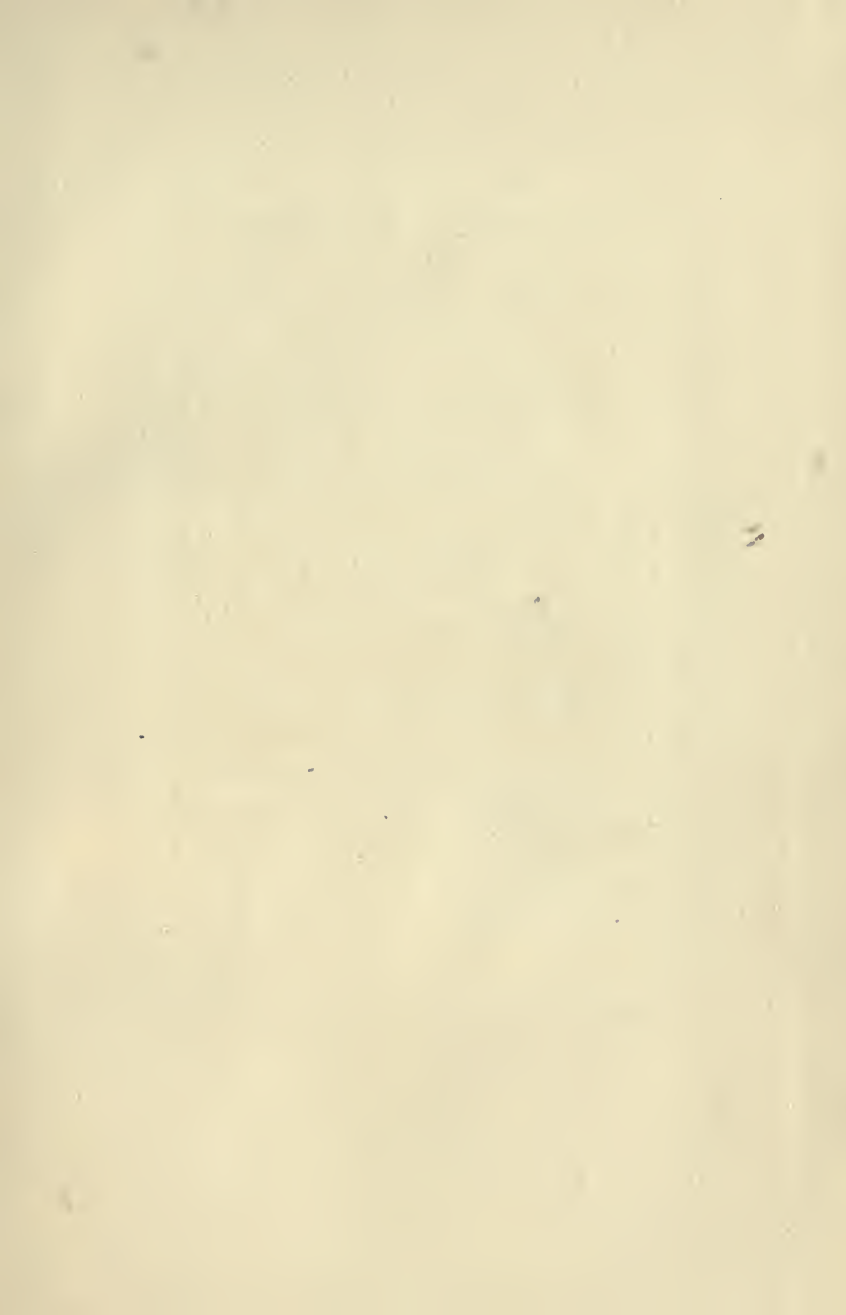
CATALOG

THE WASSON WAY



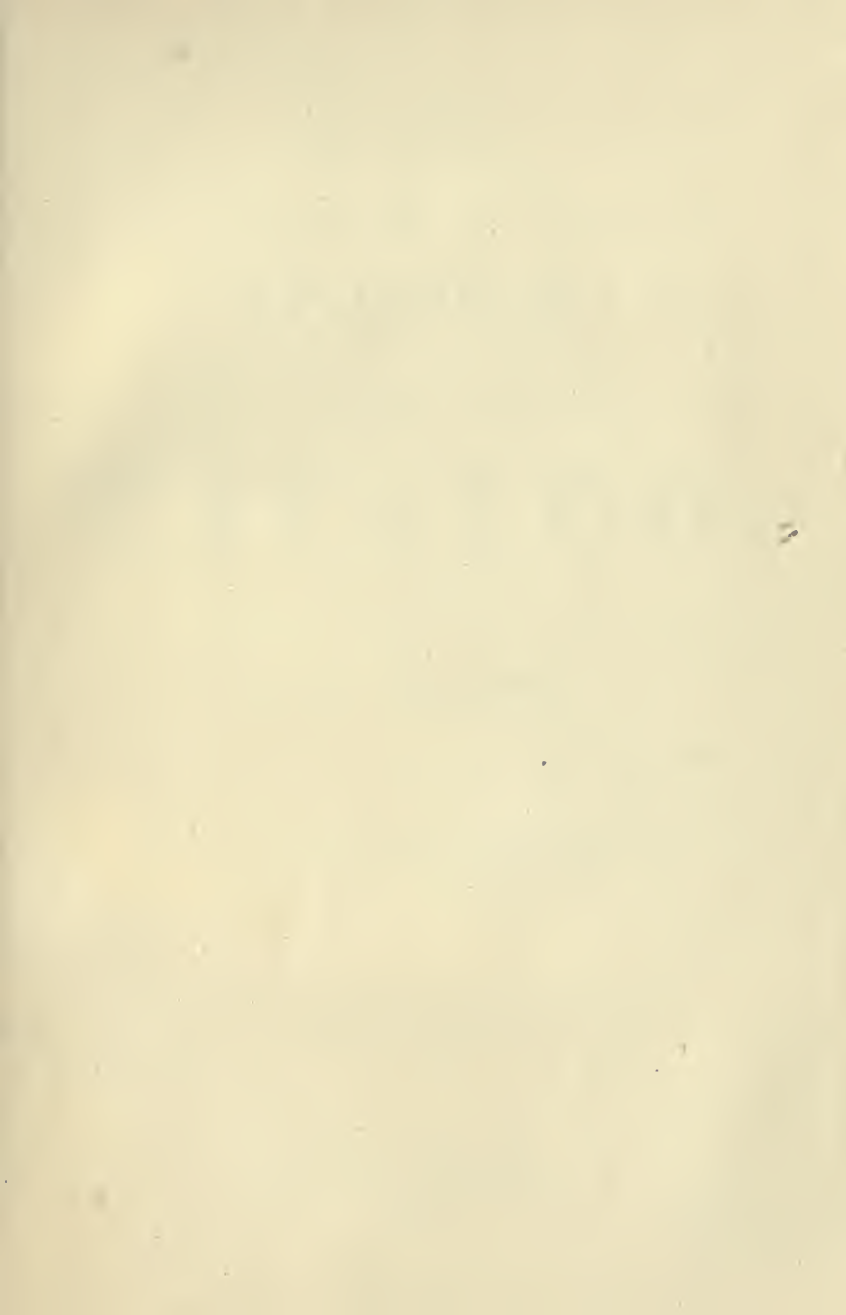
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HOW
TO
COMPILE
A
CATALOG

BY
G. G. WASSON

*The Art of Compiling Copy, Selection of Illustrations,
together with other valuable information
for the Advertiser.*

FIRST EDITION

KANSAS CITY, MO.
TIERNAN-DART PRINTING CO.
1915

2246
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G. G. WASSON,
KANSAS CITY, MO.

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TO

Mr. Charles E. Haeth,

UNDER WHOSE INSTRUCTION AND COUNSEL

I HAVE DILIGENTLY LABORED FOR SO MANY YEARS,

THIS BOOK IS SINCERELY DEDICATED.



INTRODUCTORY.

While the writing of this book has not been entirely for my health and amusement, I can truthfully say that it is not written for money alone. No one can remember exactly all his experiences and the little details, and it is well for his own reference to have in print the solution he has found for many of the problems which confront him in his daily routine.

Then, too, it is my hope that the book will be of service to you who are contemplating the building of a catalog, giving you the benefit of my experience in this line. Although I have been following this occupation only a few years, I have made enough errors to teach me a number of lessons in catalog-building. If you can profit by what I have learned without

having to repeat the mistakes, I am sure the book should be invaluable to you.

If I have not incorporated everything a catalog compiler should know, it is not from lack of meeting plenty of difficulties, for all of the notations made and data collected were assembled during the course of constructing a large catalog. It is possible that your experiences cover about the same ground as mine, but even then it is probable you may be able to gain at least one new idea from "The Wasson Way." If you differ from me, or take exceptions to any of the information I am trying to convey, I should be glad to hear from you, for I am always glad of the chance of learning more. The deeper I get into this catalog-building, the more I find there is to learn.

G. G. W.

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The Science of Catalog Building.

A new salesman, starting out upon his first trip, represents a great responsibility to himself and his house. His first call often decides his future relations with the customer or prospect. It is necessary for him to create in the prospect's mind a favorable impression on first sight. He must be able to explain the merits of the goods he has to sell, describe them in an intelligent manner, be able to offset any possible objections and have a good closing argument. Should he not be able to do this, the chances are very much in favor of his being turned down without an order.

This is exactly true of a catalog. It will either sell the goods or go to the nearest wastebasket. It must create on first sight a favorable impression. The pages must contain intelligent information about the goods as to their uses and merits, and overcome any possible objection that might arise in the prospect's mind and it, too, must have a good closing argument.

It must be remembered that to follow the line of least resistance in compiling a catalog will produce the same results as that of an unsuccessful salesman—an expensive luxury that will not sell the goods. It has not been many years since the greater percentage of business houses, when building a catalog, deemed it advisable to make it a work of art, using the highest grades of paper it was possible to buy, illustrating with the most expensive engravings and

halftones and binding in exquisite design of cover—in other words, building it in the most expensive way.

The traveling man of those days was not a salesman, but an order-taker, a good fellow and a medium by which his house could spend its good money with the customers and prospects. His duties were to spend most of his time at the hotel, entertaining the public in general, and, at the close of each day, send in a record of his expenditures, along with any orders that his friends might hand to him.

It might be well to admit, however, that these traveling men were prosperous and made money for the houses which they represented, for at that time there was very little competition and in the smaller towns a traveling man was seldom seen. Those days are past and almost forgotten. The traveling man of today is a salesman, and eighty percent of salesmanship is hard work. Instead of entertaining his customers and spending the house's money, it is necessary for him to keep up with the great procession of knowledge. He must keep pace with his many competitors, as well as his customers, who are daily becoming more educated in the lines they carry.

The catalog naturally follows the same great trend of business channels as does the salesman. An extravagant and expensively compiled catalog may draw some expression from the prospect as to the beautiful work of art, and he might go so far as to take the copy home for the children to cut out the pictures, and use the cover for a family album, but

will it sell goods? Don't misunderstand me and draw the conclusion that I recommend cheap printing, for I do not mean to convey this idea in the least. A successful catalog must be uniform and attractive, have neatness and refinement and cultivate in the prospect's mind a high ideal for the house it represents. It should have some originality to distinguish it from the many books issued and distributed by competitors; it should be up to date, and the fashions in printing change just the same as the styles and fashions of dress. Printed matter comes in contact with many phases of life and it is impossible for people of intelligence to keep themselves outside its sphere of influence, therefore it is a vital factor in our education and progress.

In designing a catalog, to be successful there are a great many things to be considered. The length of lines is an important one, as it has been proven that the most easily read line is two and three-fourths inches, but there is very little difference between this length and two and one-half to three and three-fourths inches. A real short line is just as hard to read as one extremely long. The size of type, of course, has a great deal to do with this.

Another feature to be remembered is that the right-hand or odd page sheet is the one that attracts the eye first, and it is well to get onto these pages the goods that it is desired to push, or good illustrations that will have a tendency to attract the prospect.

Black type on a white background is more easily read than vice versa.

A catalog is a salesman and sales-room combined. The business, resulting from the distribution, will be measured by its salesmanship, whether good or bad. To be a good salesman, it must have all the earmarks and qualities of the salesman himself. To make it an attractive sales-room, the goods must be displayed in a way that will show them off to best advantage. In order to create a favorable impression, the catalog must be attractive and have a pleasing personality.

A bound catalog is more serviceable to most classes of trade than the loose-leaf system for it has been demonstrated that a very small percentage of merchants will keep a loose-leaf catalog up-to-date by inserting the leaves sent to them. The merchant usually has a great many catalogs, representing houses from whom he may buy goods, and if they are all loose-leaf books it would be quite a task to keep them all corrected. If part of them are bound, he will have a tendency to use the bound copies, for just so long as he fails to keep up the loose-leaf books, there exists in his mind the fact that it is not up to date and he will hesitate to use it.

There are many kinds and styles of catalogs, but the one that stands in a class by itself is the one arranged in such a way that, when the prospect knows what he wants, he may find it quickly, determine the price and order it in an intelligent manner without having to write a history of the article itself. The description of each article should be explicit and complete so that a prospect who does not know what he wants may, by reading the description, find out what he wants for his requirements.

If a firm should receive an inquiry for an opening stock of goods, they would not send out an inexperienced man or a cheap order-taker just the same as they would not send out a poor catalog. It must be remembered that a catalog cannot answer back, except through the information contained in the description of each article. This description must be written in a dignified manner, commanding attention, and at the same time have a forcefulness that compels respect.

The value of a catalog cannot be measured by its size, weight in pounds or elaborateness in design, but by the amount of returns in inquiries and sales from its distribution.



Qualifications of the Advertiser.

Catalog Building is not unlike that of Advertising, the definition of which is "The Art of Selling by Publicity."

There are three very essential qualifications of an Advertiser to be successful in building catalogs:

The Goods,
The Markets and
The People.

He must have a very thorough knowledge of the goods to be advertised. It is not necessary to know all the details of each article, such as the nature of the

materials or ingredients entering into its manufacture, or the manner in which it is finished or assembled, but it is necessary to know the finished article as to its size, weight, finish, use, how packed, etc. He must study the article, select the appealing features, keep his mind open to impressions, and determine the strong selling points. The price, quality, etc., must be brought out clearly in the advertisement. 20

He must have ability to study the market conditions and gauge the demand existing or to be created, analyze competition and arrange his selling prices in an intelligent and uniform manner.

It is necessary to study the people to whom the advertisement is appealing, form a picture of customers as to their needs, tastes, prejudices, methods of reasoning and ability to purchase.

Each advertisement must be written as if a single person was to be sold, keeping in mind these leading characteristics.

He must have skill in writing copy which must be clear, logical, concise and well displayed; have a thorough knowledge of illustrations, printing, engraving and comparative values.

An advertiser cannot be guided by what he sees and reads, but by what his customer sees and reads.

The intelligence of the reader should not be offended by over-statements or exaggerated claims, but the ad should be written along common-sense and logical lines.

Relation of Advertiser to Printer.

The advertiser should take into his confidence the printer, explaining to him in detail the methods to be followed in compiling; soliciting suggestions, getting away from the mistaken idea that he knows exactly how to proceed, and that the printer should follow out his instructions in every instance.

He should allow the printer to use his own judgment in many matters entering into the work. The printer usually knows more about the mechanical side of production than the advertiser, and by permitting the printer to handle this part of the work, it allows the advertiser to devote more energy to the selling points and appealing features of the advertisement.

The printer should at all times feel free to offer any suggestion in regard to the use of illustrations, size of page, style and size of type for body and headings, arrangement, paper stock, cover, binding, etc. The most effective catalogs are those produced where the printer and advertiser have worked in harmony.



Selection of Catalog Size.

The first step in compiling a catalog is to decide on the size of the book. There are a great many things that should be considered in this. It should be a size that will cut with as little waste as possible, ex-

cept in case of a great number of copies to be run, when the stock may be ordered in exact size to suit the book. This should be referred to the printer, as he may offer suggestions that would be of great benefit.

The catalog should be of sufficient size to enable the advertiser to show good clear illustrations and detailed information of the article or articles to be inserted on each page. This is governed to a great extent by the class of goods or kind of business to be advertised.

A general supply company or mail-order house, handling a varied line of goods, generally requires a larger page than a manufacturer of shoes, hats, stoves, etc. A general supply catalog may list on each page a great many articles without impairing the selling value or crowding the page, causing it to be hard to read, while the manufacturers' catalog should not list more than one article or one class of articles on a page. The size of the page also depends upon the thickness of the book, as for instance: a catalog small in width and length, but extraordinarily thick is not as efficient as one with a larger leaf and thinner. A catalog with a page 9x12 inches, containing only 32 pages, is not so desirable as one with a page 5x7 inches, containing 128 pages, unless it is printed on very heavy paper and expensively bound.

Arranging Memorandums for Compiling.

The success of a finished catalog depends more upon the manner in which it is started than any other phase of the work entering into its construction. All the plans, details and purposes should be gone over and decided upon carefully before the actual work begins.

It is well to write out the details and make carbon copies, delivering one copy to the printer. In this way the printer, as well as the advertiser, knows exactly the plan and they may work in harmony to that end. These sheets may contain information, such as the general design of the page, size of type in body and headings, number of copies, approximate number of pages, paper stock, cover stock, binding, number of proofs desired on first revision, time of delivery, etc.

The advertiser must bear in mind that the greater number of details worked out before starting will hasten the catalog to the finished state. If these details are decided upon in the course of construction, the copy will necessarily have to be changed a great many times, causing confusion not only to the advertiser, but also to the printer, and the proof pages will be delayed indefinitely, and just as long as they are held, awaiting decision or corrections, there will be constant demands for alterations and changes which add materially to the cost of the catalog.

It is impossible to adopt in this book any set course for the advertiser to follow, as the character of the business, the class of goods, the amount of money

to be spent and the people to whom the catalog appeals enter into the application of the policy to follow. Some classes of goods demand an expensive catalog, printed on high-grade paper, illustrated in expensive color half-tones and bound in a high-priced cover, while with other lines a less expensive book will better answer the purpose. While the writer does not recommend or advise the use of cheap paper and illustrations, it is his candid opinion that in most cases the simpler design proves the more effective. A large amount of money is spent uselessly each year by manufacturers and jobbers in trying to make their catalog more elaborate and artistic than their competitors.

In the revision of an old issue, there are always a great many memorandums that have been made out in regard to changes, new goods to be added or items to be eliminated. These are usually kept in a special file for this purpose or inserted in a copy of the old catalog. In any case, they should be numbered as to the page on which they refer or as to the place they are to be added.

The advertiser should avail himself of a uniform size ruled sheet of paper for use in compiling and pasting copy for printer (preferably 8½x11 inches). This size is best for any catalog page, except where the page is larger than 8½x11 inches, the ruled sheets should be larger in comparison. Take two issues of the old book, cut them up and paste each page down flat on this uniform size sheet. These sheets need not have more than one-quarter inch margin all around after the catalog page has been pasted. Copy

should never be sent to the printer with writing on both sides of the sheet. This not only increases the chances for mistakes, but makes more work for the printer and greater catalog expense in the end.

In case the paper used in the old issue of the catalog is fairly heavy, it is not absolutely necessary to paste down on uniform sheets, but send the original sheet to the printer, being sure to cross out with a blue pencil all matter on the reverse side.

When these pages have all been assembled correctly, the accumulated memorandums should be inserted between the leaves in their respective places.

The next step is to go through these leaves and memorandums very carefully as to the arrangement. Possibly there are goods in the rear that should be in another part of the catalog. Often, in issuing a catalog, there are new goods added at the last moment, making it impossible to list them in their proper place. These must be transferred at the beginning, and, in case the printer has the old pages standing, it is very necessary to mark on the copy from what page it is transferred. In this way, the printer may find the page immediately.

In case the book is being built entirely new and there is no copy from which to work, it is best to use a scrap or invoice book, containing as many leaves as there are to be catalog pages, inserting the memorandums, correspondence and information between the leaves in keeping with the proposed arrangement.

It is impossible to take each page at a time and decide definitely on all questions entering into the re-

vision of the copy. It is necessary to go through the entire catalog, page by page, with regard to illustrations, making a note of every one that is to be replaced or new goods of which it is necessary to have illustrations made. It may be decided at the same time the size of illustrations that will be most suitable in each instance. In case of a manufacturer, it is, of course, necessary to have these made.

Information in regard to the purchase of drawings, halftones, etc., will be found in another part of this book.

A general supply catalog is made up of numerous articles, purchased direct from the manufacturers or sales agents, who are ordinarily glad to furnish electrotypes or halftones. The use of these does not give uniformity of illustrations and the advisability of using them depends to a great extent on the class of catalog being printed.

When the illustrations have been decided upon and ordered, go through the pages a second time with regard to information it is necessary to have for descriptions, specifications, weights, prices, etc. The compiling should never be started until all of this information has been obtained or written for.



Laying Out Copy for the Printer.

The Layout of Copy and the Making up of the Pages is the most vital part of compiling a catalog. Upon this depends to a great extent the cost of the job. A poorly written page, which is hard for the printer to decipher, will add from 20 to 30 percent to

the cost of composition. The mistake should not be made of sending the copy to the printer in an imperfect condition with the idea of putting it into shape after it has been set up in type. This often causes contention between the printer and advertiser and can be avoided if reasonable care is exercised in compiling the original copy.

The Styles and Sizes of Type should be definitely decided on, both for use in body as well as headings. It is preferable to have uniform type for this purpose. Much type matter is now being set on the linotype machine, which, as the name implies, sets a line of type at one operation, being a solid slug of metal, type high, and thickness according to size of type. Some printers, however, employ the monotype machine, which produces type in single letters in justified lines.

These machines set lines in different lengths, and the charge for setting lines under two inches or over five inches long is much more expensive. It is well to select a uniform length of line that will set with the least possible expense. This should be referred to the printer for suggestions.

The Headings should be indicated in some way that will be familiar to the printer. A blue pencil may be used for this purpose, as well as for marking any special style or size of type, length of lines, etc. It is often necessary to set type at the side of an illustration or set in two, three or four columns. Copy for this should be marked the number of ems it is to be set. Almost any printer will supply the advertiser with a standard type measure.

The following illustration is an example of using blue check mark for heading and blue dash for sub-headings, set at side of illustration twelve ems, under illustration twenty ems.

✓ Men's Winter Caps.

10

- Fur Lined

Set 12 ems

One of our most popular designs, provided with turn-down neck and ear protector, making it a favorite for winter weather.

Made of the very best materials and guaranteed as to style and workmanship.

Set 20 ems

- No. 7680 Gray Coplin

Sizes 6 $\frac{1}{8}$, 6 $\frac{1}{4}$, 6 $\frac{7}{8}$, 7, 7 $\frac{1}{8}$, 7 $\frac{1}{4}$ Each \$2.00

- No. 7861 Tan Linen

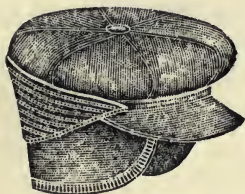
Sizes 6 $\frac{1}{8}$, 6 $\frac{1}{2}$, 7, 7 $\frac{1}{4}$, 7 $\frac{1}{2}$ Each \$2.25

- No. 8670 Fancy Gray Silk

Sizes 6 $\frac{1}{8}$, 6 $\frac{1}{4}$, 7, 7 $\frac{1}{4}$, 7 $\frac{1}{2}$ Each \$3.00

The following shows the advertisement, illustrated on opposite page, after it has been set up according to the instructions outlined in copy:

MEN'S WINTER CAPS.



Fur Lined.

One of our most popular designs, provided with turn-down neck and ear protector, making it a favorite for winter weather.

Made of the very best materials and guaranteed as to style and workmanship.

No. 7680 Gray Poplin.

Sizes $6\frac{1}{8}$, $6\frac{1}{4}$, $6\frac{3}{8}$, 7, $7\frac{1}{8}$, $7\frac{1}{4}$Each, \$2.00

No. 7861 Tan Linen.

Sizes $6\frac{1}{8}$, $6\frac{1}{2}$, 7, $7\frac{1}{4}$, $7\frac{1}{2}$Each, \$2.25

No. 8670 Fancy Gray Silk.

Sizes $6\frac{1}{8}$, $6\frac{1}{4}$, 7, $7\frac{1}{4}$, $7\frac{1}{2}$Each, \$3.00

The white ruled sheets, $8\frac{1}{2} \times 11$ inches, previously mentioned, should be used in writing copy and use these entirely for copy to the printer. The use of extra large sheets with writing all over the sheet, some cross-wise and even upside down, is wrong and will add more to the cost of the catalog than any other single operation.

Except when the advertisements are small ones, it is best not to write more than one on a sheet (by advertisement is meant each individual article to be listed, as they are all advertisements that make up the catalog). The extravagant use of these ruled sheets is a good investment. The mistake should not be made of trying to write on one sheet all the copy for a page of the catalog; it is better to use a dozen ruled

sheets, writing each advertisement on a separate sheet and clipping them together. This gives the advertiser plenty of space to write the advertisement in an intelligent manner, and the printer has a good comprehensive copy from which to work, and may tell at a glance just how it is to be set. This reduces the labor and chances of mistakes to the minimum.

By referring to the tables of type sizes, number of lines to the inch, number of words to the square inch, etc., found elsewhere in this book, it will be found comparatively easy to tell just how much space each advertisement will occupy. Familiarity with these tables enables the advertiser to count the lines of long-hand writing and estimate in a fairly accurate manner just how much space it will set in type. This information may be marked on the sheet so the pages may be made up complete, and in one operation the printer can return the proof, made up in page form, eliminating one complete handling of all the matter, as if made up in galley form.

However, if it is desired, the copy may be set in galleys, being one continuous string of proof, and the pages made up from the galleys. This, of course, causes delays and additional handling which adds materially to the final cost.

In laying out the copy, it is better to paste a proof of the illustration on the page, so the printer's proof-reader may be sure they have used the proper illustration and have it inserted correctly. In addition to this, it is necessary to number the illustration, inserting the corresponding number on the copy. A blue pencil is best to use for this purpose. Illustrations

tions should always be numbered on the lower side, not on the bottom, as it is often necessary to underlay or shave off the bottom of a plate in order to get it exactly type high.

In case there is no proof available of the illustration, the block may be laid on the copy and pencil drawn around it to give the printer an idea as to the size, inserting the number inside the square on copy and correspondingly on the plate.

In making up the different advertisements into pages, it is necessary to use a Master Page. In case the copy is all new and written in longhand, it is better for nothing to appear on this master page, except the numbers of the advertisements to be inserted, possibly the main heading for each page, such as the firm name, address, etc., and the catalog page number.

The numbers of the advertisement should be inserted on the master page in the location that this particular article will appear. This same number should also appear on the advertisement copy, viz.: Master page 65 to receive four advertisements—the master page will be numbered one, two, three and four in the relative positions to receive the copy, and the copy will be numbered 1 page 65, 2 page 65, 3 page 65 and 4 page 65, respectively, as per illustration on page 29.

THE WRONG WAY.

SMITH AND CO, KANSAS CITY, Mo 65.

Finger Rings 12K Gold Filled Sterling Silver Pencils

Put #25 Put #27

Illustration shows exact sizes. The signet rings are very suitable for boys and ladies wear. Prices include engraving. Furnished in sizes 4 to 9, inclusive.

No. 8563 Coral Each \$0.75
No. 8564 Coral Cameo Each .50
No. 8565 Coral Cameo Each 1.00
No. 8566 Signet Each .95
No. 8567 Sapphire Each .50
No. 8568 Amethyst Each .60
No. 8569 J. add Each .90

These pencils are very desirable and contain the best materials obtainable. They are very attractive and are of the finest workmanship.

No. 5231 chased barrel Each \$0.75
No. 5232 pearl barrel Each 1.00
No. 5233 chased barrel, Amethyst in top Each .80

Pocket Knives and Scissors.

Put #28

Gold Filled Broaches

Put #26

Illustration shows exact sizes. Beautifully Enameled. The prices quoted are as low as can be made considering quality and workmanship.

The blades are of finest steel, guaranteed in every way. The pearl end stag horn handle, high grade.

No. 4210 knife, stag horn handle, 3 blades Each \$0.75
No. 4211 knife, pearl handle, 2 blades Each 1.00
No. 4212 knife, pearl handle, 3 blades Each 1.25

No. 5234 twist barrel Each .30
No. 5235 chased barrel Each .50
No. 5236 fine chased barrel Each .80
No. 5237 pearl barrel Each .90

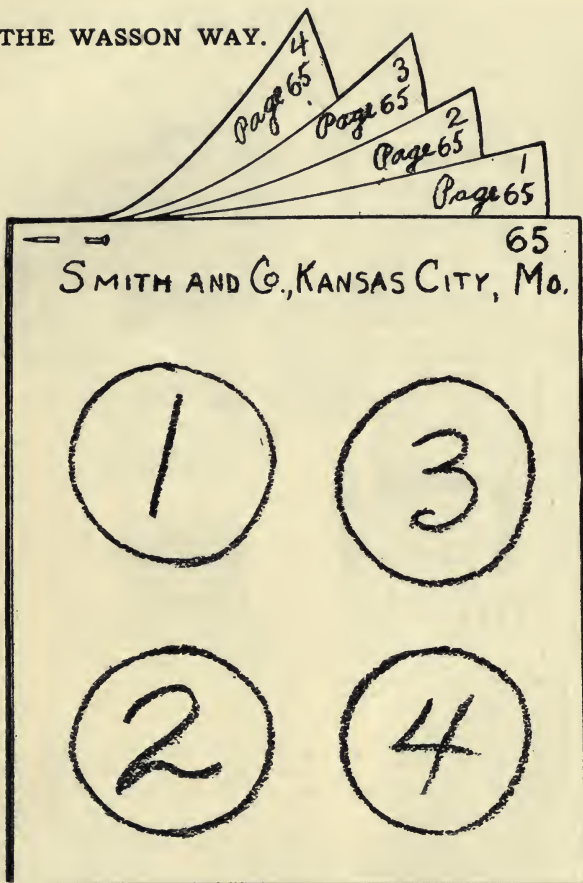
No. 5210 scissors, button hole, japanned handles Each \$0.50
No. 5212 scissors, embroidery, gilt handles Each .50

No. 6521 Ivory Handle Each \$0.65
No. 6522 Pearl Each .40
No. 6523 Emerald Each .40

The above illustrates a page of copy, made up in such a way that it would be slow work for the machine operator to set up and would also take more time for the printer in assembling the type or slugs into page form.

See The Wasson Way on next page.

THE WASSON WAY.



The above illustration shows The Wasson Way of laying out new copy for the printer, the top sheet being the master page and the attached sheets each containing an advertisement to appear on page 65.

Copy of this kind gives the printer nice clean, intelligent information from which to build the page, and it may be put together at a minimum cost of labor.

THE WRONG WAY.

SMITH AND CO., KANSAS CITY, Mo. 65

ARMSTRONG TOOL HOLDERS

A Practical and Economical System for the use of both hand and high-speed Tool Steel.

Have all Paying 75 percent Off.

Price for Tool complete, with wrench and two cutters.

ARMSTRONG BORING TOOL

Requires no boring or tapping and very little grinding. It is always ready for use, is very stiff and will bore close to in a straight or bent.

Complete, with holder and bar, straight and 45 degree and square, two cutters and double-hand wrench.

| No. | Size | Dist. square | Size | With set | With high-speed |
|-----|---------|--------------|---------|----------|-----------------|
| 20 | 2 1/2" | 1 1/2" | 2 1/2" | 2.50 | 3.50 |
| 21 | 3" | 2" | 3" | 3.50 | 4.50 |
| 22 | 3 1/2" | 2 1/2" | 3 1/2" | 4.50 | 5.50 |
| 23 | 4" | 3" | 4" | 5.50 | 6.50 |
| 24 | 4 1/2" | 3 1/2" | 4 1/2" | 6.50 | 7.50 |
| 25 | 5" | 4" | 5" | 7.50 | 8.50 |
| 26 | 5 1/2" | 4 1/2" | 5 1/2" | 8.50 | 9.50 |
| 27 | 6" | 5" | 6" | 9.50 | 10.50 |
| 28 | 6 1/2" | 5 1/2" | 6 1/2" | 10.50 | 11.50 |
| 29 | 7" | 6" | 7" | 11.50 | 12.50 |
| 30 | 7 1/2" | 6 1/2" | 7 1/2" | 12.50 | 13.50 |
| 31 | 8" | 7" | 8" | 13.50 | 14.50 |
| 32 | 8 1/2" | 7 1/2" | 8 1/2" | 14.50 | 15.50 |
| 33 | 9" | 8" | 9" | 15.50 | 16.50 |
| 34 | 9 1/2" | 8 1/2" | 9 1/2" | 16.50 | 17.50 |
| 35 | 10" | 9" | 10" | 17.50 | 18.50 |
| 36 | 10 1/2" | 9 1/2" | 10 1/2" | 18.50 | 19.50 |
| 37 | 11" | 10" | 11" | 19.50 | 20.50 |
| 38 | 11 1/2" | 10 1/2" | 11 1/2" | 20.50 | 21.50 |
| 39 | 12" | 11" | 12" | 21.50 | 22.50 |
| 40 | 12 1/2" | 11 1/2" | 12 1/2" | 22.50 | 23.50 |
| 41 | 13" | 12" | 13" | 23.50 | 24.50 |
| 42 | 13 1/2" | 12 1/2" | 13 1/2" | 24.50 | 25.50 |
| 43 | 14" | 13" | 14" | 25.50 | 26.50 |
| 44 | 14 1/2" | 13 1/2" | 14 1/2" | 26.50 | 27.50 |
| 45 | 15" | 14" | 15" | 27.50 | 28.50 |
| 46 | 15 1/2" | 14 1/2" | 15 1/2" | 28.50 | 29.50 |
| 47 | 16" | 15" | 16" | 29.50 | 30.50 |
| 48 | 16 1/2" | 15 1/2" | 16 1/2" | 30.50 | 31.50 |
| 49 | 17" | 16" | 17" | 31.50 | 32.50 |
| 50 | 17 1/2" | 16 1/2" | 17 1/2" | 32.50 | 33.50 |
| 51 | 18" | 17" | 18" | 33.50 | 34.50 |
| 52 | 18 1/2" | 17 1/2" | 18 1/2" | 34.50 | 35.50 |
| 53 | 19" | 18" | 19" | 35.50 | 36.50 |
| 54 | 19 1/2" | 18 1/2" | 19 1/2" | 36.50 | 37.50 |
| 55 | 20" | 19" | 20" | 37.50 | 38.50 |
| 56 | 20 1/2" | 19 1/2" | 20 1/2" | 38.50 | 39.50 |
| 57 | 21" | 20" | 21" | 39.50 | 40.50 |
| 58 | 21 1/2" | 20 1/2" | 21 1/2" | 40.50 | 41.50 |
| 59 | 22" | 21" | 22" | 41.50 | 42.50 |
| 60 | 22 1/2" | 21 1/2" | 22 1/2" | 42.50 | 43.50 |
| 61 | 23" | 22" | 23" | 43.50 | 44.50 |
| 62 | 23 1/2" | 22 1/2" | 23 1/2" | 44.50 | 45.50 |
| 63 | 24" | 23" | 24" | 45.50 | 46.50 |
| 64 | 24 1/2" | 23 1/2" | 24 1/2" | 46.50 | 47.50 |
| 65 | 25" | 24" | 25" | 47.50 | 48.50 |
| 66 | 25 1/2" | 24 1/2" | 25 1/2" | 48.50 | 49.50 |
| 67 | 26" | 25" | 26" | 49.50 | 50.50 |
| 68 | 26 1/2" | 25 1/2" | 26 1/2" | 50.50 | 51.50 |
| 69 | 27" | 26" | 27" | 51.50 | 52.50 |
| 70 | 27 1/2" | 26 1/2" | 27 1/2" | 52.50 | 53.50 |
| 71 | 28" | 27" | 28" | 53.50 | 54.50 |
| 72 | 28 1/2" | 27 1/2" | 28 1/2" | 54.50 | 55.50 |
| 73 | 29" | 28" | 29" | 55.50 | 56.50 |
| 74 | 29 1/2" | 28 1/2" | 29 1/2" | 56.50 | 57.50 |
| 75 | 30" | 29" | 30" | 57.50 | 58.50 |
| 76 | 30 1/2" | 29 1/2" | 30 1/2" | 58.50 | 59.50 |
| 77 | 31" | 30" | 31" | 59.50 | 60.50 |
| 78 | 31 1/2" | 30 1/2" | 31 1/2" | 60.50 | 61.50 |
| 79 | 32" | 31" | 32" | 61.50 | 62.50 |
| 80 | 32 1/2" | 31 1/2" | 32 1/2" | 62.50 | 63.50 |
| 81 | 33" | 32" | 33" | 63.50 | 64.50 |
| 82 | 33 1/2" | 32 1/2" | 33 1/2" | 64.50 | 65.50 |
| 83 | 34" | 33" | 34" | 65.50 | 66.50 |
| 84 | 34 1/2" | 33 1/2" | 34 1/2" | 66.50 | 67.50 |
| 85 | 35" | 34" | 35" | 67.50 | 68.50 |
| 86 | 35 1/2" | 34 1/2" | 35 1/2" | 68.50 | 69.50 |
| 87 | 36" | 35" | 36" | 69.50 | 70.50 |
| 88 | 36 1/2" | 35 1/2" | 36 1/2" | 70.50 | 71.50 |
| 89 | 37" | 36" | 37" | 71.50 | 72.50 |
| 90 | 37 1/2" | 36 1/2" | 37 1/2" | 72.50 | 73.50 |
| 91 | 38" | 37" | 38" | 73.50 | 74.50 |
| 92 | 38 1/2" | 37 1/2" | 38 1/2" | 74.50 | 75.50 |
| 93 | 39" | 38" | 39" | 75.50 | 76.50 |
| 94 | 39 1/2" | 38 1/2" | 39 1/2" | 76.50 | 77.50 |
| 95 | 40" | 39" | 40" | 77.50 | 78.50 |
| 96 | 40 1/2" | 39 1/2" | 40 1/2" | 78.50 | 79.50 |
| 97 | 41" | 40" | 41" | 79.50 | 80.50 |
| 98 | 41 1/2" | 40 1/2" | 41 1/2" | 80.50 | 81.50 |
| 99 | 42" | 41" | 42" | 81.50 | 82.50 |
| 100 | 42 1/2" | 41 1/2" | 42 1/2" | 82.50 | 83.50 |
| 101 | 43" | 42" | 43" | 83.50 | 84.50 |
| 102 | 43 1/2" | 42 1/2" | 43 1/2" | 84.50 | 85.50 |
| 103 | 44" | 43" | 44" | 85.50 | 86.50 |
| 104 | 44 1/2" | 43 1/2" | 44 1/2" | 86.50 | 87.50 |
| 105 | 45" | 44" | 45" | 87.50 | 88.50 |
| 106 | 45 1/2" | 44 1/2" | 45 1/2" | 88.50 | 89.50 |
| 107 | 46" | 45" | 46" | 89.50 | 90.50 |
| 108 | 46 1/2" | 45 1/2" | 46 1/2" | 90.50 | 91.50 |
| 109 | 47" | 46" | 47" | 91.50 | 92.50 |
| 110 | 47 1/2" | 46 1/2" | 47 1/2" | 92.50 | 93.50 |
| 111 | 48" | 47" | 48" | 93.50 | 94.50 |
| 112 | 48 1/2" | 47 1/2" | 48 1/2" | 94.50 | 95.50 |
| 113 | 49" | 48" | 49" | 95.50 | 96.50 |
| 114 | 49 1/2" | 48 1/2" | 49 1/2" | 96.50 | 97.50 |
| 115 | 50" | 49" | 50" | 97.50 | 98.50 |
| 116 | 50 1/2" | 49 1/2" | 50 1/2" | 98.50 | 99.50 |
| 117 | 51" | 50" | 51" | 99.50 | 100.50 |
| 118 | 51 1/2" | 50 1/2" | 51 1/2" | 100.50 | 101.50 |
| 119 | 52" | 51" | 52" | 101.50 | 102.50 |
| 120 | 52 1/2" | 51 1/2" | 52 1/2" | 102.50 | 103.50 |
| 121 | 53" | 52" | 53" | 103.50 | 104.50 |
| 122 | 53 1/2" | 52 1/2" | 53 1/2" | 104.50 | 105.50 |
| 123 | 54" | 53" | 54" | 105.50 | 106.50 |
| 124 | 54 1/2" | 53 1/2" | 54 1/2" | 106.50 | 107.50 |
| 125 | 55" | 54" | 55" | 107.50 | 108.50 |
| 126 | 55 1/2" | 54 1/2" | 55 1/2" | 108.50 | 109.50 |
| 127 | 56" | 55" | 56" | 109.50 | 110.50 |
| 128 | 56 1/2" | 55 1/2" | 56 1/2" | 110.50 | 111.50 |
| 129 | 57" | 56" | 57" | 111.50 | 112.50 |
| 130 | 57 1/2" | 56 1/2" | 57 1/2" | 112.50 | 113.50 |
| 131 | 58" | 57" | 58" | 113.50 | 114.50 |
| 132 | 58 1/2" | 57 1/2" | 58 1/2" | 114.50 | 115.50 |
| 133 | 59" | 58" | 59" | 115.50 | 116.50 |
| 134 | 59 1/2" | 58 1/2" | 59 1/2" | 116.50 | 117.50 |
| 135 | 60" | 59" | 60" | 117.50 | 118.50 |
| 136 | 60 1/2" | 59 1/2" | 60 1/2" | 118.50 | 119.50 |
| 137 | 61" | 60" | 61" | 119.50 | 120.50 |
| 138 | 61 1/2" | 60 1/2" | 61 1/2" | 120.50 | 121.50 |
| 139 | 62" | 61" | 62" | 121.50 | 122.50 |
| 140 | 62 1/2" | 61 1/2" | 62 1/2" | 122.50 | 123.50 |
| 141 | 63" | 62" | 63" | 123.50 | 124.50 |
| 142 | 63 1/2" | 62 1/2" | 63 1/2" | 124.50 | 125.50 |
| 143 | 64" | 63" | 64" | 125.50 | 126.50 |
| 144 | 64 1/2" | 63 1/2" | 64 1/2" | 126.50 | 127.50 |
| 145 | 65" | 64" | 65" | 127.50 | 128.50 |
| 146 | 65 1/2" | 64 1/2" | 65 1/2" | 128.50 | 129.50 |
| 147 | 66" | 65" | 66" | 129.50 | 130.50 |
| 148 | 66 1/2" | 65 1/2" | 66 1/2" | 130.50 | 131.50 |
| 149 | 67" | 66" | 67" | 131.50 | 132.50 |
| 150 | 67 1/2" | 66 1/2" | 67 1/2" | 132.50 | 133.50 |
| 151 | 68" | 67" | 68" | 133.50 | 134.50 |
| 152 | 68 1/2" | 67 1/2" | 68 1/2" | 134.50 | 135.50 |
| 153 | 69" | 68" | 69" | 135.50 | 136.50 |
| 154 | 69 1/2" | 68 1/2" | 69 1/2" | 136.50 | 137.50 |
| 155 | 70" | 69" | 70" | 137.50 | 138.50 |
| 156 | 70 1/2" | 69 1/2" | 70 1/2" | 138.50 | 139.50 |
| 157 | 71" | 70" | 71" | 139.50 | 140.50 |
| 158 | 71 1/2" | 70 1/2" | 71 1/2" | 140.50 | 141.50 |
| 159 | 72" | 71" | 72" | 141.50 | 142.50 |
| 160 | 72 1/2" | 71 1/2" | 72 1/2" | 142.50 | 143.50 |
| 161 | 73" | 72" | 73" | 143.50 | 144.50 |
| 162 | 73 1/2" | 72 1/2" | 73 1/2" | 144.50 | 145.50 |
| 163 | 74" | 73" | 74" | 145.50 | 146.50 |
| 164 | 74 1/2" | 73 1/2" | 74 1/2" | 146.50 | 147.50 |
| 165 | 75" | 74" | 75" | 147.50 | 148.50 |
| 166 | 75 1/2" | 74 1/2" | 75 1/2" | 148.50 | 149.50 |
| 167 | 76" | 75" | 76" | 149.50 | 150.50 |
| 168 | 76 1/2" | 75 1/2" | 76 1/2" | 150.50 | 151.50 |
| 169 | 77" | 76" | 77" | 151.50 | 152.50 |
| 170 | 77 1/2" | 76 1/2" | 77 1/2" | 152.50 | 153.50 |
| 171 | 78" | 77" | 78" | 153.50 | 154.50 |
| 172 | 78 1/2" | 77 1/2" | 78 1/2" | 154.50 | 155.50 |
| 173 | 79" | 78" | 79" | 155.50 | 156.50 |
| 174 | 79 1/2" | 78 1/2" | 79 1/2" | 156.50 | 157.50 |
| 175 | 80" | 79" | 80" | 157.50 | 158.50 |
| 176 | 80 1/2" | 79 1/2" | 80 1/2" | 158.50 | 159.50 |
| 177 | 81" | 80" | 81" | 159.50 | 160.50 |
| 178 | 81 1/2" | 80 1/2" | 81 1/2" | 160.50 | 161.50 |
| 179 | 82" | 81" | 82" | 161.50 | 162.50 |
| 180 | 82 1/2" | 81 1/2" | 82 1/2" | 162.50 | 163.50 |
| 181 | 83" | 82" | 83" | 163.50 | 164.50 |
| 182 | 83 1/2" | 82 1/2" | 83 1/2" | 164.50 | 165.50 |
| 183 | 84" | 83" | 84" | 165.50 | 166.50 |
| 184 | 84 1/2" | 83 1/2" | 84 1/2" | 166.50 | 167.50 |
| 185 | 85" | 84" | 85" | 167.50 | 168.50 |
| 186 | 85 1/2" | 84 1/2" | 85 1/2" | 168.50 | 169.50 |
| 187 | 86" | 85" | 86" | 169.50 | 170.50 |
| 188 | 86 1/2" | 85 1/2" | 86 1/2" | 170.50 | 171.50 |
| 189 | 87" | 86" | 87" | 171.50 | 172.50 |
| 190 | 87 1/2" | 86 1/2" | 87 1/2" | 172.50 | 173.50 |
| 191 | 88" | 87" | 88" | 173.50 | 174.50 |
| 192 | 88 1/2" | 87 1/2" | 88 1/2" | 174.50 | 175.50 |
| 193 | 89" | 88" | 89" | 175.50 | 176.50 |
| 194 | 89 1/2" | 88 1/2" | 89 1/2" | 176.50 | 177.50 |
| 195 | 90" | 89" | 90" | 177.50 | 178.50 |
| 196 | 90 1/2" | | | | |

THE WASSON WAY.

SMITH AND CO., KANSAS CITY, MO.

65



ARMSTRONG TOOL HOLDERS.

A Practical and Economical System for the use of Self-hardening and High-speed Tool Steel.

Leaves all Forging, 70 percent Grinding.

Price is for Tool complete, with wrench and two cutters.

| No. | Size of tool holder, in. approx. | Size of cutter | With self-hardening | With high-speed |
|-----|----------------------------------|----------------|---------------------|-----------------|
| 008 | 1/2 x 1/2 x 1/2 | 1/2 | 1.60 | 1.80 |
| 08 | 1/2 x 1/2 x 1/2 | 1/2 | 1.65 | 1.85 |
| 18 | 1/2 x 1/2 x 1/2 | 1/2 | 1.90 | 2.10 |
| 28 | 1/2 x 1/2 x 1/2 | 1/2 | 2.30 | 2.70 |
| 38 | 1/2 x 1/2 x 1/2 | 1/2 | 2.80 | 3.20 |
| 48 | 1/2 x 1/2 x 1/2 | 1/2 | 3.20 | 3.60 |
| 58 | 1/2 x 1/2 x 1/2 | 1/2 | 4.75 | 5.25 |
| 68 | 1/2 x 1/2 x 1/2 | 1/2 | 7.00 | 7.50 |
| 78 | 1/2 x 1/2 x 1/2 | 1/2 | 12.00 | 12.50 |



ARMSTRONG CUTTING-OFF TOOLS.



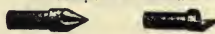
Is an other form of forged in the tool is the proportionate cost of maintenance, compared with effective work done, so great as in the cutting-off tool. Consequently, in this class of work, the Armstrong system is especially effective and economical.

The blades are beveled on both sides and are held on an angle with proper clearance and rake to insure a clean cutting tool.

Price is for Tool complete with wrench and one blade.

| No. | Size of tool holder, in. approx. | Size of blade, in. | With self-hardening | With high-speed |
|-----|----------------------------------|--------------------|---------------------|-----------------|
| 19 | 2 1/2 x 3 1/2 | 1 1/2 | 1.80 | 2.00 |
| 29 | 3 1/2 x 4 1/2 | 2 1/2 | 1.65 | 1.85 |
| 39 | 4 1/2 x 5 1/2 | 3 1/2 | 1.90 | 2.10 |
| 49 | 5 1/2 x 6 1/2 | 4 1/2 | 2.30 | 2.70 |
| 59 | 6 1/2 x 7 1/2 | 5 1/2 | 2.80 | 3.20 |
| 69 | 7 1/2 x 8 1/2 | 6 1/2 | 3.20 | 3.60 |
| 79 | 8 1/2 x 9 1/2 | 7 1/2 | 4.75 | 5.25 |
| 89 | 9 1/2 x 10 1/2 | 8 1/2 | 7.00 | 7.50 |
| 99 | 10 1/2 x 11 1/2 | 9 1/2 | 12.00 | 12.50 |

No. 125A-CENTER REAMERS.



No. 1. The included angle is 50 degrees, unless otherwise ordered. In ordering, give diameter of both shank and body.

| Shank, in. | Body, in. | No. 1. Per cent. | No. 2. Per cent. |
|------------|-----------|------------------|------------------|
| 1/2 | 1/2 | 2.90 | 3.50 |
| 3/4 | 3/4 | 3.25 | 3.90 |
| 1 | 1 | 3.75 | 4.50 |
| 1 1/4 | 1 1/4 | 7.00 | 8.50 |
| 1 1/2 | 1 1/2 | 8.50 | 10.00 |

No. 125A HARD REAMERS IN SETS.



Consisting of 125A hard reamers, 1/2 to 1-inch by 16 in., making 12 reamers in the case. The case is of oak, heavily finished. Each tool has its groove, thus preventing any injury by contact and making selection easy.

No. 27A-Set, complete with reamers.....Each \$42.50

The above illustrates the same page of copy as shown on preceding page, but made up The Wasson Way. Note how the copy has been cut and pasted on, allowing room to write in the changes so the machine operator may read in a straight line. Attached to this Master Page are two copies, numbers 1 and 2, on which are written the new items to be added, and the numbers indicate the relative positions which they are to occupy.

Reading Copy and Proof.

Probably one of the greatest and most common mistakes made in compiling a catalog is failure to read the copy after it has been made up and before it goes to the printer. It is much easier and less expensive to correct an error before it is set up in type than afterwards. Each advertisement should be read, word for word, and if prices appear, they should be checked very carefully before going to the printer. Negligence in this will add a large percentage in total cost to the catalog production.

When proofs of the pages have been received from the printer, it is, of course necessary for them to be read and checked very carefully. The advertiser should read his original copy and some one familiar with the line should check from the printer's proof. The advertiser being familiar with his original copy will catch any article the printer might overlook.

When copy has been checked as above, the advertiser should read to himself every word of the printer's proof and make corrections not noticed in reading from the original copy. This reading is very important as it enables the advertiser to catch the strain of selling arguments presented in the reading matter, as to its efficiency, the correct style of type, the forcefulness of the illustrations and the general design and make-up of the page.

In the correcting and verifying of the printer's proofs rests great responsibility, for when they have

been returned marked OK, they will appear in the finished catalog in just this way. Careful checking of these proofs is the means of finishing the catalog with a minimum of errors.



Proofreader's Marks.

| | | | |
|-----|-------------------------|------------------|-----------------|
| ✕ | Change bad letter | ↯ | Superior figure |
| ⌞ | Push down space | ↰ | Inferior figure |
| 9 | Turn over | [or] | Move over |
| 8 | Take out (<i>del</i>) | (?) | Query |
| ^ | Left out; insert | out, s. c. | Out, see copy |
| # | Insert space | □ | Em quad space |
| ✓ | Even spacing | / ¹ / | One-em dash |
| ⌋ | Less space | / ² / | Two-em dash |
| ⊂ | Close up entirely | ¶ | Paragraph |
| ⌈ | Raise | No ¶ | No paragraph |
| ⌋ | Lower | w. f. | Wrong font |
| /// | Straighten lines | | Let it stand |
| ⊙ | Period | stet. | Let it stand |
| / | Comma | tr. | Transpose |
| ⊖ | Colon | Caps. | Capital letters |
| ;/ | Semicolon | s. c. | Small caps |
| ∨ | Apostrophe | l. c. | Lower case |
| “ | Quotation | Ital. | Italics |
| ⁄ | Hyphen | Rom. | Roman |

Building an Index.

This is one part of the catalog about which there is always more or less discussion and contention. Each individual catalog requires a different form of index and it is impossible to outline a set of rules to follow. The task, of course, increases with the number of pages and articles. A catalog descriptive of a line of men's shoes or clothing probably would not require an extensive index, while one illustrating and describing a line of novelties, general supplies, such as a mail-order house, wholesale drugs or a hardware store, would require a very large index.

It is many times advisable to have a double or triple index, each article to appear a great many times. In building an index of this kind entirely new, where there is no old issue from which to work, it is best to start at the front page of the catalog and dictate to a stenographer each article in all the classifications that it should appear in the index. This must be dictated by a person thoroughly familiar with the business, knowing all the terms used in ordering the goods by customers. The stenographer may then write each of the items on separate slips of paper which may be assembled alphabetically and recopied on the regulation sheet that goes to the printer. The index is complete and contains every article advertised in the book.

When building a revision of an old issue of a catalog and the old index can be used as a copy from which to revise, it will save time to correct it rather

than to dictate it entirely new. In doing this, cut the old index up into strips, three to four inches long, and paste down in the center of the regulation ruled sheet that goes to the printer.

Almost anyone may read the old index to the advertiser, who, by being familiar with the new issue, may turn to the proof and call the new page almost instantly, checking on the proof with a pencil each item when indexed. When all of old index has been revised, it is necessary to go through the catalog and index all articles not checked with a pencil.



Making Pages into Forms.

The revised proof pages, unless they require a great amount of alterations, making it necessary to revise a second proof, should be returned to the printer, made up in forms. The number of pages in a form depends entirely upon the size of the catalog page and the size of printing press employed by the printer. The usual size of forms are 4, 8, 16 or 32 pages. The greater number of pages in a form makes less impressions and therefore less expense.

These forms are locked up by the printer in chases. When these forms are locked, ready for the press room, a proof is taken on a full-sized catalog sheet. This is called the stone proof and it is advisable that the advertiser look it over as it shows the arrangement of the pages as they will appear in the catalog.

Keeping a Record of Pages.

In compiling a catalog of any considerable size, it is necessary to keep a record of the pages sent to the printer, the dates delivered, the pages made up into forms and the dates of delivering and receiving the forms.

The following illustration suggests a form that may be used for this purpose:

| First Proof to Printer | | | Forms to Printer | | | Forms Rec'd | |
|------------------------|--------|--------|------------------|----------|--------|-------------|---------|
| Pages | Except | Date | No. | Pages | Date | No. | Date |
| 1 to 50 | 43 | 1-1-15 | 1 | 1 to 16 | 2-1-15 | 1 | 3-1-15 |
| 51 to 75 | | 1-8-15 | 2 | 17 to 32 | 2-8-15 | 2 | 3-10-15 |
| 76 to 140 | 135 | 2-1-15 | 3 | 33 to 48 | | | |
| 141 to 200 | | 2-9-15 | 4 | 49 to 64 | | | |
| etc. | | | etc. | | | etc. | |



Press-work.

While it is not necessary for the advertiser to be thoroughly familiar with the press-work, still upon this work depends to a large extent the finished appearance of the catalog. The colors and shades of ink are a very important part of this work and a poor selection of ink often mars an otherwise well compiled book.

It is necessary to have a perfect make-ready in order to get out of the illustrations all there is in them. The use of a varied selection or kinds of illustrations

causes greater care in the make-ready as a different method is used in making ready the several kinds of illustrations.

Some inks that give excellent results under certain conditions will not work well on others. The grade of paper, the kind of illustrations and the prevailing temperature and atmosphere of the press-room play an important part in this work.



Binding and Cover.

There are many ways to bind and cover a catalog and on this work depends a great amount of expense or economy in the cost of production. A sewed book is more expensive than one stitched. The advantage in having the book sewed is that it will lay open and stay flat.

In adopting the sewed method of binding, it is not advisable to use insert pages, such as a page printed in colors, to describe more completely certain articles. Insert pages in a sewed book must be tipped or pasted onto the form by hand and this increases the expense.

These insert pages may be used in a stitched book without additional expense, providing they are inserted in the center or between two complete forms. If it is found advisable to place the insert pages at any other place, it is necessary that each form be cut open and the page inserted by hand. In providing these insert pages they should be the same size as the folded signature.

Illustrations.

In making the catalog a salesroom it is necessary to use good clear illustrations. This is just as important in a catalog as in a magazine advertisement. A great many catalogs are printed, year after year, from the same old cuts, when the continual wear from impressions causes them to lose their selling value and, in a great many lines, the illustration is more important as a selling factor than the description. A poor illustration often hinders the sale of a good article.

An illustration should bring out some detail of the article that will appeal to the reader's mind. Frequently an article illustrated, showing the manner in which it is used, is effective.

When ordering illustrations from the engraver to be reproduced from copy, care should be exercised in furnishing good clear proofs from which to photograph.

Instructions should never be written on the face of copy or on the back of unmounted photographs. Matter, written on back of photographs, often shows on the finished plate, unless carefully worked over by the engraver. In case it is necessary to write on proof, a blue pencil should be used, as blue markings will not reproduce except in halftones. In mailing photographs, paintings or drawings, they should be packed between stiff, smooth cardboards to insure safe delivery.

Engravings for catalogs consist of three kinds—Halftones, Line Etchings and Wood Cuts.

Wood Cuts were in use almost exclusively for catalogs until Photo Engraving was perfected and came into general use about 1890. They are still used in some catalogs where the paper used is very thin or uncalendered and for illustrating machinery and small mechanical objects, but even in these cases zinc etchings are more generally used.

The original wood cut should not be placed on the press to print from, unless for a very short run, as the wood will wear away. It is always best to have an electrotype made from the original, then the original wood cut may be filed away and additional electrotypes may be made as required.

One of the disadvantages of wood cuts is the extra time required in having electrotypes made. The extra expense of this operation and the original cost of wood cut are also objections. In this process the engraver makes a drawing or photograph of the article to be engraved directly upon a block of boxwood, made type high. The outline is then engraved in the wood by hand, and the shading is usually engraved by means of a ruling machine and multiple line gravers. The result is likely to be very stiff. However, when purely mechanical subjects are to be illustrated, and if the engraver is an artist as well as a real master of the gravers, very clear and satisfactory wood cuts may be obtained.

Zinc Etchings are made by photographing from pen drawings and printing the image on zinc, which is afterwards etched in a solution of nitric acid to a depth of 1/32 inch, routed out in the large spaces to a depth of about 1/16 inch and mounted on a base

of wood or metal to the thickness of the height of type. Copy, suitable for this work, is drawn on smooth paper or cardboard, preferably Strathmore drawing board, and must be drawn with black ink—India ink or Higgins' waterproof ink are generally used. Ordinary writing ink will not do because it contains blue and will not photograph well. The drawing is usually made two or three times as large as it is desired to have the etching; the outline and shading are usually executed in lines. In some cases, where very soft effects are desired, the shading is done by hand stippling or splatter work, or the drawing is made on rough paper with a crayon pencil, or on Ross board with lines or patterns slightly raised in relief. For either of these methods the drawings should not be made larger than for one-half reduction.

The shading may be omitted from the drawing and transferred on the plate from a film, called Ben Day films. This is the method used in making colored zinc etchings and for the even tints on large surfaces in one color.

Prints in black ink on white paper, made from zinc etchings and wood cuts, are also used as copy. These are called reproductions. Under proper conditions very good results may be obtained in this way, and this opens a very large field for clipping from magazines, catalogs, etc., and enables some to secure their zinc etchings at a merely nominal expense.

Photographs of articles from which drawings are to be made assist the artist, but when the article itself can be placed before the artist, photograph may

be dispensed with, or the artist can have a blue print or silver print made of a suitable size and posed just as desired.

These prints are valuable to the artist as they furnish an image to be worked over with waterproof ink, after which the unnecessary portion of the print can be bleached out to secure an almost white background for the drawing. When used in making wash drawings it will be found best to trace the image on a rough Strathmore or illustration board in preference to inking on the print itself as above. For very fine-line etchings copper is used, but the cost is about three times that of zinc.

Halftones derive their name from the fact that by this process the engraver is able to procure tones of gray, half way between solid black and pure white. However, all other tones in a photograph, drawing or painting may be reproduced.

This process fills a long-felt want, and is considered one of the notable inventions of the age. Through the use of halftone screens, the engravers are enabled to present absolutely faithful copies of portraits, photographs and paintings, retaining all the delicate shadings of the original. Formerly, these copies were engraved in wood or drawn in black and white to be reproduced in line etching, and these processes requiring too much of the human element, the results were very often of a poor quality.

This process is founded on photographing the image on a piece of copper or zinc, usually about 16 gauge, as in making line etchings. However, in making a negative for halftone, a ruled screen is inserted in

the camera between the lens and the negative glass, and the lines of the screen are impressed on the negative. These screens are of various rulings, ranging 50, 65, 85, 100, 110, 120, 133, 150 and 175 lines to the inch. The lines are ruled in two directions, crossing each other at right angles. From the light passing through these rulings results a negative, with small black dots in the dark parts of the picture and solid opaque spots with pin holes of light for the light parts of the picture.

When reproduced on the metal, the opposite of this, of course, results. The metal is prepared by polishing to a very high surface and then flowing over with a solution, sensitive to light, but when baked hard, also impervious to a mild acid. This enamel is usually left on the plate and gives it a rich brown appearance. However, when it becomes necessary to remove the enamel in order to burnish any portion which is too light, or to correct any defect in the plate, the absence of the enamel need not cause alarm, as it is valuable mostly for the appearance only.

When the image has been printed on the metal, the plate is placed in a tray containing a small quantity of perchloride of iron solution, which attacks the exposed portions of the metal and by successive stages the exposed portions are eaten away until the plate is etched to a sufficient depth from which to be printed.

Most shops now use a machine for etching half-tones, as it has been found that machine etching gives a greater depth to the plate and requires less staging and re-etching. The staging consists of painting out portions of the picture on the plate to prevent etching

as deeply as the remainder in order to keep those portions darker for greater contrast. Unless this staging is properly done, the plate will be flat and lacking in contrast.

The plate should also be re-etched to make the highlights still lighter. The plate may then be trimmed square and the edge beveled to admit of tacking on a wood base, or the edges may be vignettied until they fade away, or the engraver may outline the shape of the machine or article engraved and then rout away all background, or portions of the background may be routed away and the remainder vignettied.

The copy may be of almost any sort and of many colors. Photographs, if clear, clean and smooth, make beautiful halftones, and if photograph is lacking in quality or contains objectionable features, it may be retouched. Most photographs can be retouched to advantage.

The finest results are obtained by making wash-drawings or air-brush drawings which are done with water color paints.

In case of small flat objects, the object itself may be photographed directly with the halftone screen. This is called a Direct Halftone and is used extensively in producing jewelry, lace and cloth illustrations.

When the halftone is to be printed on the best enamel paper, it should be made with a very fine screen, not coarser than 133 lines to the inch, while for use on flat or bond and machine finished papers the screen should be 100, 110 or 120 lines to the inch.

For coarse or rough stock, such as newspaper or egg shell, the screen should be 65 or 85 lines to the inch. The finer screened halftones are much better etched on copper, while for coarse screen halftones zinc may be used for economy.

Copper is recommended in all cases for highest quality, except in newspaper work or for fast work on perfecting press.

The zinc plate is etched with a much harsher acid and will not admit of the fine staging or re-etching which is done on the best copper plates.

For Combination Line and Halftone very good effects are produced by making a line negative of parts of the drawing, if strictly black and white, and patching onto this a halftone negative from wash drawing or photograph containing delicate shades, then etching the whole on one plate. This method is extensively used for cover pages, when a smooth paper is used, also for magazine advertisements.

Colored illustrations can be made very economically in zinc etching, provided the subject is not too exacting. However, for the finest illustrations one plate, at least, is usually a halftone. For many mechanical subjects a solid or Ben Day zinc tint block may be used to make the color plates, but for figures, leathers and many other subjects, 2, 3 or 4 color halftones are best.

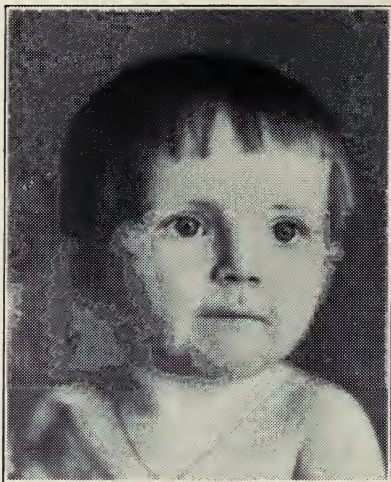
Electrotypes are made by moulding in wax any wood cut, zinc or copper etching, halftone or an entire form of type (which may contain many engravings).

The wax is then coated with a metallic film and plated with copper to a thickness of approximately three sheets of paper. The wax is then melted away from the copper and the shell of copper backed up by flowing molten metal over the back of the shell to a thickness of about one-quarter inch. The plate is then straightened out and punched up, dressed down to an even thickness and may be mounted on wood or metal base, or beveled on the edges to be used on patent bases.

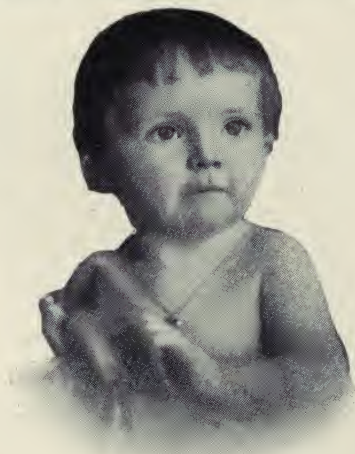
For the finest engravings, nickel faced electrotypes are recommended. To secure this nickel facing, the wax case is first hung in a nickel solution and, after securing a thin film of nickel, the case is removed to a copper solution and treated in the usual manner.

The very fine screened halftones are very difficult for the electrotyper to duplicate, and in a great many cases the best results cannot be obtained from electrotypes of fine halftones and should not be attempted. In such cases the original halftone should be used, even if it is necessary to insert it into an electrotype of the type form.





85-Line Square Finish Halftone, from Photograph.



110-Line Cut-out Background and Vignetted Halftone, from Photograph.

By Courtesy of The Burger Engraving Co., Kansas City. Mo.



133-Line Oval Halftone, from Photograph.



150-Line Vignetted Halftone, from Photograph.
By Courtesy of The Burger Engraving Co., Kansas City, Mo.



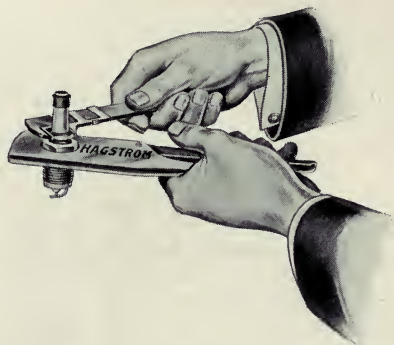
150-Line Halftone, square finish, from Wash Drawing, executed with air brush.



110-Line Halftone, square finish, from Photograph.



100-Line Halftone, square finish, with upper background routed out, from Photograph.



133-Line Halftone, with background routed out, from Wash Drawing.



150-Line Halftone, background routed out, vignetted at bottom, from Retouched Photograph.

This Non-Conductive
Porcelain Guard Feature
Alone Worth
the Price of the Plug

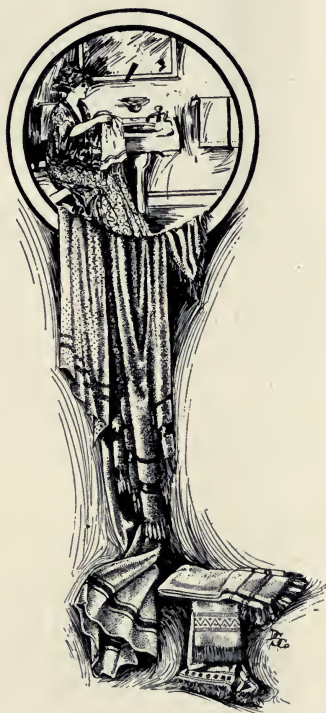
133-Line Halftone, from Re-
touched Photograph, with
background routed out and
combination line.



Zinc Etching, from Pen
Drawing, shaded in out-
line.



133-Line Halftone, square finish, from Wash Drawing.



Zinc Etching, from Shaded Pen Drawing.

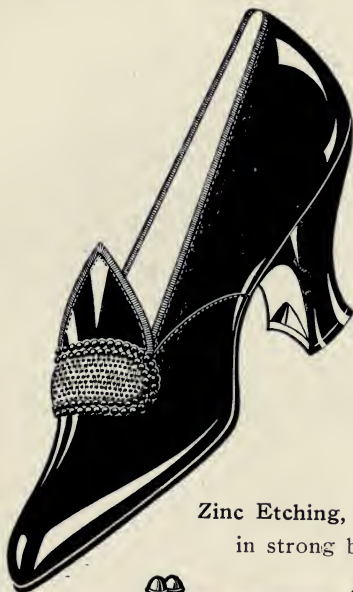


133-Line Cut-out Background Halftone, from Wash Drawing.

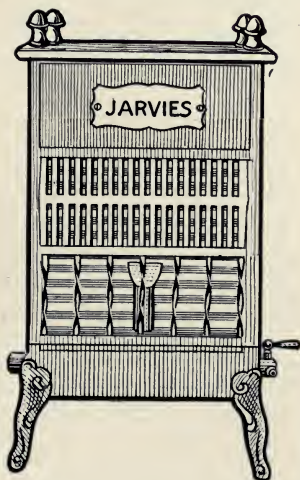


Positive or Reverse Zinc Etching, from Pen Drawing.

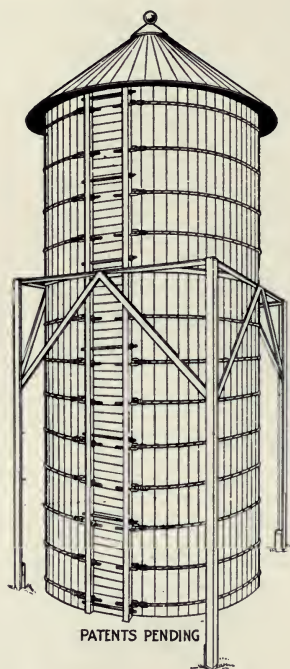
This was made from black lines on white paper.



Zinc Etching, from Pen Drawing
in strong black and white.



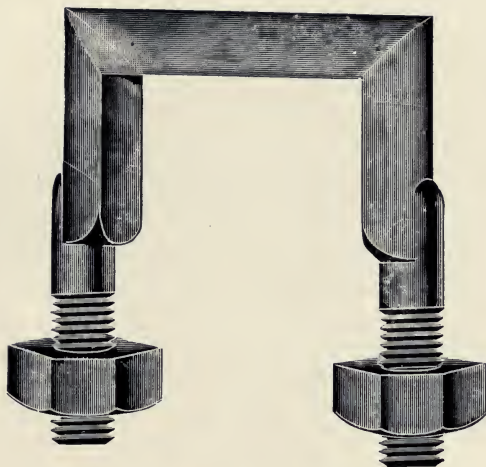
Shaded Zinc Etching, from Pen Drawing over blue print.



Zinc Etching, from Pen Drawing in outline.



Zinc Etchings, reproduced from pictures cut from catalogs.



Original Wood Cut.



Electrotype from Wood Cut.

TRADE NET PRICE LIST OF PHOTO ENGRAVINGS.

| | Per sq. inch | Minimum charges | | | |
|--|------------------|-----------------|----------|-------------|---------|
| Halftones on Copper | | | | | |
| 85 to 150 line, inclusive, square finish | 15c | \$2.00 | not over | 13½ sq. in. | |
| Four or more in one order at same focus | | 1.50 | " | " | 10 " " |
| Fifty or more in one order at same focus | | 1.25 | " | " | 10 " " |
| Halftones Finer Than 150 Line.. | 20c | 2.50 | " | " | 10 " " |
| Duplicate Halftones , square finish, ordered same time with original, at 15 percent discount. | | | | | |
| Highlight Halftones , special estimate. | | | | | |
| Metzograph Halftones | 20c | 2.50 | " | " | 12½ " " |
| News-Tones (zinc halftones 60 to 100 line screen only) | 10c | 1.25 | " | " | 12½ " " |
| Extra Halftone Negatives, Cut in | 7½c | 1.00 | " | " | 10 " " |
| Zinc Line Etchings , singly, minimum | | 1.00 | " | " | 14 " " |
| Less than 40 sq. in. in one plate | 7c | | | | |
| Over 40 sq. in. in one plate..... | 6c | | | | |
| Four or more minimum zinc etchings in one order at same focus | | .75 | " | " | 10 " " |
| Seven to ten, ditto, ditto..... | | .70 | " | " | 10 " " |
| Eleven to twenty, ditto, ditto.... | | .60 | " | " | 5 " " |
| Twenty-one or over, ditto, ditto.. | | .50 | " | " | 5 " " |
| Zinc Line Reproductions from lithograph or steel plate copy, penmanship, or shorthand.... | | | | | |
| | 10c | 1.25 | " | " | 12½ " " |
| Extra Line Negatives Cut in... | 4c | .50 | " | " | 12½ " " |
| Positive (Reverse) Etchings.... | 10c | 1.50 | " | " | 15 " " |
| Extra Deep Etching on Zinc.... | 15c | 1.50 | " | " | 10 " " |
| Line Etching On Copper..... | 25c | 2.50 | " | " | 10 " " |
| Combination Line and Halftone Plates On Copper | | | | | |
| | 35c | 3.50 | " | " | 10 " " |
| Combination Line and Halftone Plates on Zinc | | | | | |
| | 25c | 2.50 | " | " | 10 " " |
| Three-Color Process Halftone Plates , sq. finish..... | | | | | |
| | 1.25 | 30.00 | " | " | 24 " " |
| Four-Color , square finish..... | 1.50 | 35.00 | " | " | 24 " " |
| Two-Color Halftones and Duo-Types , sq. finish | 30c (each plate) | 6.00 | " | " | 10 " " |
| Duographs , square finish | 35c (" ") | 12.50 | " | " | 18 " " |

Art Work—Retouching, altering or improving copies, grouping and decorating photographs, sketches and drawings, extra at \$1.25, \$1.50 and \$2.00 per hour, according to grade of artist employed.

Hand Tooling, Outlining, Vignetting and Oval finish extra according to time of workman, on all classes of work.

Vignetting and Outlining halftones of minimum sizes 50c to \$1.50 each extra, larger sizes in proportion.

Oval and Circular forms extra as follows: 2x3 or smaller, 25c each; 3x4, 35c each; 4x5, 50c each; larger sizes in proportion.

Mounting—All original engravings mounted on wood base unless ordered on metal, which is charged for extra. **Metal Base**, 6c net per square inch, minimum 25c. Mounting on wood to order, 1c per square inch, minimum 15c.

Combination Color Plates, line and halftone, subject to special estimate.

Color Plates (on zinc) regular zinc etching rates, figuring all plates size of the largest in set, adding for **Artist and Ben Day Machine Work** per hour.....\$2.00

Time Painting in Plates, or Opaquing Negatives, per hour. 1.50

Proofing in Color, extra at rate of, per hour..... 1.50

Mortising, on metal, 20c for each outside mortise, 25c each for inside mortises; mortising on wood, 10c each for outside mortises, 15c each for inside mortises; 5c extra for each "Step."

Anchoring Plates on Wood, 15c extra for each anchor.

Proofing. One black proof accompanies each plate, extra proofs and proofs in color charged extra as time work.

Measurement—All plates charged at block measure (not printing face.)

Long Narrow Plates charged as though the width were one-fourth the length.

Engravings from copy requiring more than eight times reduction, double price.

Emergency Service—Work required in less than four hours' time, charged double. Sunday and holiday work extra according to cost of service.

DEFINITION OF TRADE TERMS.

As Adopted by the Central and Western Engravers' Conference at Chicago, November 11, 1911.

Halftone, Square Plate—A halftone in which the outside edges are rectangular and parallel, may be with or without single black line border.

Halftone, Outlined—A halftone with the background outside of the object entirely cut away, leaving a definite edge without shading or vignetting.

Halftone, Vignetted—A halftone in which one or more of the edges of the object are shaded from dark tones to pure white.

Halftone, Outlined and Vignetted—A halftone in which part of the background is cut away and part vignetted.

Direct Halftone—A halftone to produce which the screen negative is made by direct exposure of the article itself, and not from a photograph or drawing.

Highlight Halftone—A halftone plate in which the elimination of the dots in the highlights is accomplished by a photo-chemical process, instead of by cutting them out with a tool.

Newstone—A name sometimes given to coarse-screen halftones, always etched on zinc and used on newspapers. Also known as quartertone.

Mezzograph—A halftone made by the use of a grained screen, instead of a cross-line screen.

Duograph—Two halftone plates made from one copy and usually printed in black and one tint, or two shades of the same color, the two plates made with different screen angles.

Duotype—Two halftone plates made from one copy, both from the same negative and etched differently.

Two-Color Halftone—Two halftone plates, either or both plates an etched plate containing parts or all of the design, to be printed in two contrasting colors.

Three or More Color Halftones—Same as definition of two-color halftone, using three or more etched halftone plates.

Three-Color Process Plates—Printing plates produced from colored copy or objects to reproduce the picture or object in its original colors by a photo-chemical separation of the primary colors, and etched halftone plates to reproduce each separate color, usually printed in yellow, red and blue. An approximate result may be obtained from one-color copy by using the skill of the workmen in securing the color values on the etched plates.

Four-Color Process Plates—Same as the three-color process, with the addition of a gray or black plate.

Combination Plates, Black only—Plates made by the use of two or more halftones or line negatives, the films stripped together and printed and etched on one copper or zinc plate.

Combination Plates, Color—Plates made by the use of a key plate and color plates, either halftone or line, to be printed in two or more colors.

Ben Day Plates—Plates made by laying shaded tints on copper or zinc and etching them to produce colors or combinations of colors when printed.

Deep Etching—Additional etching made necessary to secure proper printing depth where this cannot be accomplished by routing, and usually caused by the use of dense black lines, or line negatives and halftone negatives being combined in one plate.

Positive Etching—A plate from which the blacks of the original copy will print white and the whites will print black.

Hand Tooling—Any work done by use of a tool upon the plate to increase the contrast of the etched plate, or to take away background, etc.

Embossing Plate—A plate cut or etched below its surface for the purpose of raising the image of the printed surface. Usually on metal base.

Stamping Die—A relief plate engraved on brass or zinc for stamping book covers or similar surfaces. Usually not mounted.

ELECTROTYPE SCALE.

| | | | | | | | | | | | | | | | | | | | | | |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 1.50 | 1.62 | 1.69 | 1.73 | 1.80 | 1.84 | 1.89 | 1.94 | 1.99 | 2.04 | 2.10 | 2.15 | 2.20 | 2.25 | 2.31 | 2.36 | 2.41 | 2.46 | 2.51 | 2.57 | 2.62 | 2.67 |
| 1.48 | 1.53 | 1.58 | 1.64 | 1.69 | 1.74 | 1.79 | 1.84 | 1.89 | 1.94 | 1.99 | 2.04 | 2.09 | 2.14 | 2.19 | 2.24 | 2.29 | 2.34 | 2.39 | 2.45 | 2.50 | 2.55 |
| 1.39 | 1.44 | 1.49 | 1.54 | 1.59 | 1.64 | 1.69 | 1.74 | 1.79 | 1.84 | 1.89 | 1.94 | 1.99 | 2.03 | 2.08 | 2.13 | 2.17 | 2.22 | 2.27 | 2.32 | 2.37 | 2.42 |
| 1.36 | 1.41 | 1.46 | 1.50 | 1.55 | 1.60 | 1.65 | 1.69 | 1.74 | 1.79 | 1.82 | 1.86 | 1.92 | 1.97 | 2.02 | 2.07 | 2.12 | 2.18 | 2.20 | 2.25 | 2.30 | 2.35 |
| 1.23 | 1.28 | 1.33 | 1.37 | 1.42 | 1.46 | 1.51 | 1.56 | 1.60 | 1.64 | 1.68 | 1.73 | 1.78 | 1.82 | 1.87 | 1.91 | 1.96 | 2.00 | 2.04 | 2.08 | 2.13 | 2.18 |
| 1.17 | 1.21 | 1.25 | 1.30 | 1.34 | 1.38 | 1.42 | 1.47 | 1.51 | 1.55 | 1.60 | 1.65 | 1.69 | 1.74 | 1.77 | 1.81 | 1.85 | 1.90 | 1.94 | 1.98 | 2.02 | 2.07 |
| 1.10 | 1.14 | 1.18 | 1.22 | 1.26 | 1.30 | 1.34 | 1.38 | 1.43 | 1.47 | 1.51 | 1.55 | 1.59 | 1.63 | 1.67 | 1.71 | 1.75 | 1.80 | 1.84 | 1.88 | 1.92 | 1.96 |
| 1.03 | 1.07 | 1.11 | 1.15 | 1.19 | 1.23 | 1.27 | 1.31 | 1.34 | 1.38 | 1.42 | 1.46 | 1.50 | 1.54 | 1.58 | 1.62 | 1.66 | 1.70 | 1.74 | 1.78 | 1.82 | 1.86 |
| .97 | 1.00 | 1.04 | 1.08 | 1.12 | 1.15 | 1.19 | 1.23 | 1.27 | 1.30 | 1.34 | 1.38 | 1.42 | 1.45 | 1.49 | 1.53 | 1.57 | 1.60 | 1.64 | 1.68 | 1.72 | 1.75 |
| .91 | .95 | .98 | 1.02 | 1.05 | 1.09 | 1.12 | 1.16 | 1.19 | 1.22 | 1.26 | 1.29 | 1.33 | 1.36 | 1.40 | 1.43 | 1.46 | 1.50 | 1.53 | 1.56 | 1.60 | 1.63 |
| .85 | .88 | .92 | .96 | .99 | 1.02 | 1.05 | 1.09 | 1.12 | 1.15 | 1.19 | 1.22 | 1.26 | 1.29 | 1.33 | 1.36 | 1.40 | 1.43 | 1.46 | 1.50 | 1.53 | 1.56 |
| .79 | .82 | .85 | .88 | .91 | .94 | .96 | .99 | 1.02 | 1.05 | 1.09 | 1.12 | 1.15 | 1.17 | 1.20 | 1.22 | 1.25 | 1.28 | 1.31 | 1.33 | 1.36 | 1.39 |
| .73 | .76 | .78 | .81 | .83 | .85 | .88 | .91 | .93 | .96 | .98 | 1.01 | 1.03 | 1.05 | 1.07 | 1.10 | 1.12 | 1.14 | 1.16 | 1.18 | 1.20 | 1.22 |
| .67 | .69 | .71 | .73 | .75 | .77 | .79 | .81 | .83 | .85 | .86 | .88 | .90 | .92 | .94 | .96 | .98 | 1.00 | 1.02 | 1.04 | 1.06 | 1.08 |
| .61 | .63 | .65 | .67 | .69 | .71 | .73 | .75 | .77 | .79 | .80 | .82 | .84 | .86 | .88 | .90 | .92 | .94 | .96 | .98 | 1.00 | 1.02 |
| .55 | .57 | .59 | .61 | .63 | .65 | .67 | .69 | .71 | .73 | .74 | .76 | .77 | .79 | .80 | .82 | .84 | .86 | .88 | .90 | .92 | .94 |
| .50 | .52 | .54 | .55 | .56 | .58 | .60 | .61 | .63 | .64 | .66 | .67 | .69 | .70 | .72 | .73 | .75 | .76 | .78 | .79 | .81 | .82 |
| .45 | .46 | .48 | .49 | .51 | .52 | .54 | .55 | .57 | .58 | .60 | .61 | .63 | .64 | .66 | .67 | .69 | .70 | .72 | .73 | .75 | .76 |
| .40 | .41 | .42 | .43 | .44 | .46 | .47 | .48 | .49 | .50 | .52 | .53 | .54 | .55 | .57 | .58 | .60 | .61 | .63 | .64 | .66 | .67 |
| .35 | .36 | .37 | .38 | .40 | .41 | .42 | .43 | .44 | .46 | .47 | .48 | .49 | .50 | .52 | .53 | .54 | .55 | .57 | .58 | .60 | .61 |
| .30 | .31 | .32 | .33 | .34 | .35 | .36 | .37 | .38 | .39 | .40 | .41 | .42 | .43 | .44 | .45 | .46 | .47 | .48 | .49 | .50 | .51 |
| .25 | .26 | .27 | .28 | .29 | .30 | .31 | .32 | .33 | .34 | .35 | .36 | .37 | .38 | .39 | .40 | .41 | .42 | .43 | .44 | .45 | .46 |
| .20 | .21 | .22 | .23 | .24 | .25 | .26 | .27 | .28 | .29 | .30 | .31 | .32 | .33 | .34 | .35 | .36 | .37 | .38 | .39 | .40 | .41 |
| .15 | .16 | .17 | .18 | .19 | .20 | .21 | .22 | .23 | .24 | .25 | .26 | .27 | .28 | .29 | .30 | .31 | .32 | .33 | .34 | .35 | .36 |
| .10 | .11 | .12 | .13 | .14 | .15 | .16 | .17 | .18 | .19 | .20 | .21 | .22 | .23 | .24 | .25 | .26 | .27 | .28 | .29 | .30 | .31 |
| .05 | .06 | .07 | .08 | .09 | .10 | .11 | .12 | .13 | .14 | .15 | .16 | .17 | .18 | .19 | .20 | .21 | .22 | .23 | .24 | .25 | .26 |
| .01 | .02 | .03 | .04 | .05 | .06 | .07 | .08 | .09 | .10 | .11 | .12 | .13 | .14 | .15 | .16 | .17 | .18 | .19 | .20 | .21 | .22 |
| .00 | .01 | .02 | .03 | .04 | .05 | .06 | .07 | .08 | .09 | .10 | .11 | .12 | .13 | .14 | .15 | .16 | .17 | .18 | .19 | .20 | .21 |

This illustration is reduced from the original. Full size scales may be secured from almost any engraving or electrotyping company.

Discounts according to quantity are quoted from list prices by electrotype companies.

Standard Electrotypes Scale.

In Effect October 1, 1913.

Electrotypes on Wood—Charged as per figures on scale. Larger than scale, 3 cents per square inch. Longer than scale and less than 5 inches wide, double figures on scale for one-half the length.

Electrotypes Not Blocked—15% less than figures on scale.

Electrotypes from Halftones—Patterns or forms, containing 25% or more of halftone surface, 25% more than figures on scale.

Electrotype Shells—Tinned, $\frac{1}{2}$ finished plate price. Backing shells, $\frac{2}{3}$ finished plate price.

Nickeltypes—50% more than figures on scale. Unmounted, 10% less.

Lead Mould Work—Electrotypes, $4\frac{1}{2}$ c per sq. inch mounted, 4c unmounted; nickel-steel faced, 5c per sq. inch mounted, $4\frac{1}{2}$ c unmounted; under 20 square inches, 50% more than figures on scale, NET.

Blocking on Wood— $\frac{1}{2}$ cent per square inch, NET. Minimum 12 cents, NET.

Anchoring—5 cents per anchor, NET. Minimum 15 cents, NET. 10 or more subject to quantity discount.

Blocking on Metal—Metal price, less cost of unmounted plates.

Solid Metal Base— $2\frac{1}{2}$ times figures on scale.

Metal Base Cored and Embossing—Double figures on scale.

Metal Lines—36-point body or less, 15 cents per running inch. Minimum 50 cents. 10 or more locked up in one form, 8 cents per running inch, NET. Minimum 15 cents, NET.

Color Plates—From engraved originals or duplicates charged as job work.

Tint Plates—Same as electrotypes.

Book and Catalogue Plates—From forms locked up (32 or more, 11-point thick, unmounted), 2c per square inch; minimum 40c. Plates containing 25% or more of halftone surface, $2\frac{1}{2}$ c per sq. inch. Nickeltypes, $3\frac{1}{2}$ c per sq. inch. Plates over 11-point thick, add 5% for each additional point. Curving book plates, 25% extra.

Chases and Bearers—A charge of 15 cents per lb. will be made on all chases and bearers loaned. This charge will be credited on their return.

Lockup Charge—For book and catalogue type forms, $\frac{1}{4}$ cent per square inch. Minimum 5 cents, NET.

Backing Halftones and Zinc Etchings to Plate Thickness— $\frac{1}{2}$ figures on scale, NET. Minimum 25 cents, NET.

Stereotyping—25% less than figures on scale.

Curved Job Plates— $\frac{1}{4}$ -inch thick or less, charged as per figures on scale, NET. Over $\frac{1}{4}$ -inch thick, 25% more than figures on scale, NET. Minimum 75c, NET.

Joining Rules, Building Out, Routing and Registering Color Plates—Charge as time work.

Mortising—On wood, outside 10c; inside 15c, NET. On metal, outside 15c; inside 25c, NET. Notching for key numbers 5c, NET. 10 or more subject to quantity discount.

Key Changes—5 cents each, NET.

Plate Boxes—Charged extra. Minimum 60 cents, NET.

Minimum charge, 25 cents NET.

Time work, \$1.20 per hour NET.



Wood Engraving Prices.

It is impossible to print a scale of prices applying to Wood Engravings that would in any way be accurate. They are made almost entirely by hand and for this reason the prices cannot be figured by the square inch as is done with halftones and zinc etchings which are purely photographic processes of engraving.

The size of wood engraving does not materially affect the price, as does the amount of detail work, and for this reason the price cannot be intelligently quoted without knowing the exact nature of the article to be engraved.

Prices, however, will be estimated by wood engraving firms upon receipt of copy, or information as to the kind of article and the amount of detail work desired.

How to Designate the Face of Type.

The following method of indicating the face and kind of type to be used for headings, also where it is desired to have parts of the text emphasized, is the best and simplest ever devised:

- ✓ In blue pencil, denotes capitals of the boldface.
- ✓ In blue pencil, denotes upper and lower case of the boldface.
- ✓ In black pencil, denotes capitals of the lightface.
- ✓ In black pencil, denotes upper and lower case of the lightface.

The above is intended for work where a two-letter matrix with the boldface in second position is being used. However, the system may be easily changed to suit the faces being used. Also, if different size headings are desired, the same may be indicated by putting the size before the check mark.

See examples on page 24.

Styles and Sizes of Type.

On the following pages are shown some specimen faces of type, special characters and borders, produced by linotype machines. Nearly all fonts are two-letter style, so a single face, or two distinct faces, as may be desired, can be cast at a single operation. They are arranged to show both leaded and solid print. These specimens will be found invaluable in comparing different styles and sizes, affording a quick and intelligent decision as to the best adapted for the work. A number of sizes and faces of display type are also shown.

Six Point with Boldface.

LEADED.

THE MOST ANCIENT MATERIALS USED FOR RECORDING events were bricks, tiles, shells, and tablets of stone. The methods employed for writing on these **different substances** were various. The tiles and bricks were impressed with a stamp when in a soft state; the shells and tablets of stone were etched or graven, the figures or characters being cut in their surfaces, and in some cases also stained with various colors. It was by the ancient art of stamping that the walls, palaces,

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Six Point with Italic.

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THE MOST ANCIENT MATERIALS USED FOR RECORDING events were bricks, tiles, shells, and tablets of stone. The methods employed for writing on these *different substances* were various. The tiles and bricks were impressed with a stamp when in a soft state; the shells and tablets of stone were etched or graven, the figures or characters being cut in their surfaces, and in some cases also stained with various colors. It was by the ancient art of stamping that the walls, palaces, and towers of Babylon were covered with hieroglyphics,

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Eight Point with Gothic.

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Eight Point with Italic and Small Caps.

LEADED.

THE MOST ANCIENT MATERIALS USED FOR RECORDING events were bricks, tiles, shells, and tablets of stone. The methods employed for writing on these *different substances* were various. The tiles and bricks were impressed with a stamp when in a soft state; the shells and tablets of stone were etched or graven, the figures or characters being cut in their surfaces, and in some cases also stained with various colors. It was by the ancient art of stamping that the walls, palaces, and towers of Babylon were

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Ten Point with Antique.

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THE MOST **ANCIENT MATERIALS** USED FOR recording events were bricks, tiles, shells, and tablets of stone. The methods employed for writing on these **different substances** were various. The tiles and bricks were impressed with a stamp when in a soft state; the shells and tablets of stone were etched or graven, the figures or characters being cut in their surfaces, and in some cases also stained with various colors. It was

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Ten Point with Italic and Small Caps.

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THE MOST ANCIENT MATERIALS used for recording events were bricks, tiles, shells, and tablets of stone. The methods employed for writing on these *different substances* were various. The tiles and bricks were impressed with a stamp when in a soft state; the shells and tablets of stone were etched or graven, the figures or characters

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Eight Point Typewriter.

SPACED.

The most ANCIENT MATERIALS used for recording events were bricks, tiles, shells and tablets of stone.

The methods employed for writing on these DIFFERENT SUBSTANCES were various. The tiles and bricks were impressed with a stamp when in a soft state; the shells and tablets of stone were etched or graven, the figures or characters being cut in their surfaces, and in some cases also stained with various colors.

SOLID.

It was by the ancient art of stamping that the walls, palaces and towers of Babylon were covered with hieroglyphics, which have but recently been brought to light from under the immense mounds of Mesopotamia by Lanyard and other explorers. The patriarch Job, who is supposed to have lived about 2,300 years after the creation, exclaimed, "O that my words were written! O that they were printed in a book! that

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Specimens of Display Type.

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18 How to Compile a Catalog

24 Point Caslon.

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36 Point Caslon.

36 How to Com

18 Point Clearface.

18 How to Compile a Catalog

24 Point Clearface.

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36 Point Clearface.

36 How to Compil

18 Point Clearface Italic.

18 *How to Compile a Catalog*

24 Point Clearface Italic.

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36 Point Clearface Italic.

36 *How to Compil*

Specimens of Display Type.

18 Point Webb.

18 How to Compile a Catalog

24 Point Webb.

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30 Point Webb.

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36 How to Com

18 Point Foster.

18 How to Compile a Catalog

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36 Point Foster.

36 How to Com

Novelty Advertising Cuts.

The following series of illustrations, called "Convincers," may be used profitably in announcements, envelope enclosures, etc.:



1



2



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5



6



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9



10



11

Book and Print Papers.

Find the size and weight of paper you wish to match in left hand column. Follow this line to the right, to the column of the proposed size, in which will be found the approximate weight desired.

| FLAT WRITING. | | | | | | BOOK AND PRINT. | | | | |
|---------------|---------------|---------------|---------------|---------------|---------------|-----------------|---------------|---------------|---------------|---------------|
| | 16 x 21 | 17 x 22 | 18 x 23 | 19 x 24 | 17 x 28 | | 24 x 36 | 25 x 38 | 28 x 42 | 32 x 44 |
| 16x21 | | | | | | 24x36 | | | | |
| 14 | | 16 | 17 | 19 | 20 | 20 | | 22 | 27 | 33 |
| 16 | | 18 | 20 | 22 | 23 | 25 | | 27 | 34 | 41 |
| 18 | | 20 | 22 | 24 | 26 | 30 | | 33 | 41 | 49 |
| 20 | | 22 | 25 | 27 | 28 | 35 | | 38 | 48 | 57 |
| 22 | | 24 | 27 | 30 | 31 | 40 | | 44 | 54 | 65 |
| 24 | | 27 | 30 | 33 | 34 | 50 | | 55 | 68 | 81 |
| 28 | | 31 | 35 | 38 | 40 | 60 | | 66 | 82 | 98 |
| 17x22 | | | | | | 25x38 | | | | |
| 12 | 11 | | 13 | 15 | 15 | 30 | 27 | | 37 | 44 |
| 14 | 13 | | 15 | 17 | 18 | 35 | 32 | | 43 | 52 |
| 16 | 14 | | 18 | 20 | 20 | 40 | 36 | | 50 | 59 |
| 18 | 16 | | 20 | 22 | 23 | 45 | 41 | | 56 | 67 |
| 20 | 18 | | 22 | 24 | 25 | 50 | 45 | | 62 | 74 |
| 22 | 20 | | 24 | 27 | 28 | 60 | 55 | | 74 | 89 |
| 24 | 22 | | 27 | 29 | 31 | 70 | 64 | | 87 | 104 |
| 28 | 25 | | 31 | 34 | 36 | 80 | 73 | | 99 | 119 |
| | | | | | | 100 | 91 | | 124 | 148 |
| 18x23 | | | | | | 28x42 | | | | |
| 20 | 16 | 18 | | 22 | 23 | 40 | 29 | 32 | | 48 |
| 22 | 18 | 20 | | 24 | 25 | 45 | 33 | 36 | | 54 |
| 24 | 19 | 22 | | 26 | 28 | 50 | 37 | 40 | | 60 |
| 28 | 23 | 25 | | 31 | 32 | 60 | 44 | 48 | | 72 |
| 32 | 26 | 29 | | 35 | 37 | 70 | 51 | 57 | | 84 |
| 36 | 29 | 33 | | 40 | 41 | 80 | 59 | 65 | | 96 |
| 40 | 32 | 36 | | 44 | 46 | 100 | 74 | 81 | | 120 |
| | | | | | | 120 | 88 | 97 | | 144 |
| 19x24 | | | | | | 32x44 | | | | |
| 16 | 12 | 13 | 15 | | 17 | 45 | 28 | 30 | 37 | |
| 18 | 13 | 15 | 16 | | 19 | 50 | 31 | 34 | 42 | |
| 20 | 15 | 16 | 18 | | 21 | 60 | 37 | 40 | 50 | |
| 22 | 16 | 18 | 20 | | 23 | 70 | 43 | 47 | 58 | |
| 24 | 18 | 20 | 22 | | 25 | 80 | 49 | 54 | 67 | |
| 28 | 21 | 23 | 25 | | 29 | 100 | 61 | 68 | 84 | |
| 32 | 24 | 26 | 29 | | 33 | 120 | 74 | 81 | 100 | |
| 17x28 | | | | | | 140 | 86 | 94 | 117 | |
| 20 | 14 | 16 | 17 | 19 | 23 | | | | | |
| 24 | 17 | 19 | 21 | 23 | 27 | | | | | |
| 28 | 20 | 22 | 24 | 27 | 31 | | | | | |
| 32 | 23 | 25 | 28 | 31 | 34 | | | | | |
| 36 | 25 | 28 | 31 | 34 | 38 | | | | | |
| 40 | 28 | 31 | 35 | 38 | | | | | | |

Calculating Paper Equivalents.

The comparative weight of any irregular size of paper may be determined by the following: To find the weight of a ream of paper, 23x31 ins., the equivalent in weight of a ream, 25x38 ins., weighing 80 lbs.: multiply the width by the length of the size desired (in this case 23x31 ins.) which gives 713, or the number of square inches in the sheet; multiply this by 80 (the known weight of the basis paper) which gives 57040; divide this by 950 (the number of square inches in the basis paper 25x38 ins.) which gives 60 and a fraction, or the number of pounds. Therefore a ream of paper, 23x31 ins., weighing 60 lbs., is the equivalent in weight of a ream of paper, 25x38 ins., weighing 80 lbs.

Example.

$$\begin{array}{r} 23 \times 31 \\ 23 \\ \hline \end{array}$$

713 Sq. Ins.

$$\begin{array}{r} 25 \times 38 \\ 25 \\ \hline \end{array}$$

950

$$713 \times 80 = 57040$$

$$57040 \div 950 = 60$$

23x31—60 lbs. is equal to 25x38—80 lbs.



Stock Sizes.

The following sizes are usually carried in stock by all paper dealers:

Catalog Papers.

| | | | | |
|-------|-------|-------|-------|-------|
| 22x28 | 24x36 | 28x42 | 33x46 | 38x50 |
| 22x32 | 25x38 | 32x44 | 36x48 | 44x64 |

Cover Papers.

| | | |
|---------|---------|---------|
| 20 x 25 | 22 x 28 | 23 x 33 |
|---------|---------|---------|

Number of Catalogs of Various Dimensions Cut from One Ream of Paper.

| Size Flat Sheet, Ins. | Size Page, Ins. | No. of Pages | No. of Copies |
|-----------------------|-----------------|--------------|---------------|
| 25x38 | 9 x 12 | 8 | 1000 |
| 25x38 | 6 x 9 | 8 | 2000 |
| 25x38 | 4½ x 6 | 8 | 4000 |
| 28x42 | 6¾ x 10⅛ | 8 | 2000 |
| 28x42 | 5 x 6⅝ | 8 | 4000 |
| 28x42 | 3¼ x 6½ | 8 | 6000 |
| 32x44 | 7⅝ x 10⅝ | 8 | 2000 |
| 32x44 | 5⅜ x 7⅝ | 8 | 4000 |
| 32x44 | 3¾ x 5¼ | 8 | 8000 |

16 pages cut just half the number of copies.

24 pages cut one-third, etc.



Weight of Single Sheet and Ream.

Based on 500 Sheets to the Ream.

| Weight Per Ream, Lbs. | Weight Per Sheet, Ozs. | Weight Per Ream, Lbs. | Weight Per Sheet, Ozs. |
|-----------------------|------------------------|-----------------------|------------------------|
| 30 | 24/25 | 90 | 2 22/25 |
| 35 | 1 3/25 | 95 | 3 1/25 |
| 40 | 1 7/25 | 100 | 3 1/5 |
| 45 | 1 11/25 | 110 | 3 13/25 |
| 50 | 1 3/5 | 120 | 3 21/25 |
| 60 | 1 23/25 | 125 | 4 |
| 65 | 2 2/25 | 130 | 4 4/25 |
| 70 | 2 6/25 | 140 | 4 12/25 |
| 75 | 2 3/5 | 150 | 4 4/5 |
| 80 | 2 14/25 | 180 | 5 19/25 |

Approximate Number of Words to a Square Inch.

| Point | No. to sq. in. | Point | No. to sq. in. |
|-------|-----------------|-------|-----------------|
| 5 | Leaded. . . .50 | 9 | Solid. . . .28 |
| 5 | Solid. . . .69 | 10 | Leaded. . . .16 |
| 6 | Leaded. . . .34 | 10 | Solid. . . .21 |
| 6 | Solid. . . .47 | 11 | Leaded. . . .14 |
| 7 | Leaded. . . .27 | 11 | Solid. . . .17 |
| 7 | Solid. . . .38 | 12 | Leaded. . . .11 |
| 8 | Leaded. . . .23 | 12 | Solid. . . .14 |
| 8 | Solid. . . .32 | 14 | Solid. . . .11 |
| 9 | Leaded. . . .21 | 18 | Solid. . . . 7 |

Leaded means opening of space between lines two points.



Approximate Number of Words in a Line of Type.

| Length | Size of Type in Points. | | | | | | | |
|--------|-------------------------|-----|-----|-----|-----|-----|-----|----|
| Picas. | 5 | 5½ | 6 | 8 | 10 | 12 | 14 | 18 |
| 6 | 4½ | 4 | 4 | 3½ | 3 | 2 | 2 | 1½ |
| 8 | 7 | 6 | 5 | 5 | 4 | 3 | 3 | 2 |
| 10 | 8 | 7 | 6 | 6 | 5 | 4 | 3½ | 3 |
| 12 | 9 | 8½ | 8 | 7 | 6 | 4½ | 4 | 3½ |
| 14 | 11 | 10 | 9 | 8 | 7 | 5 | 5 | 4 |
| 16 | .. | 11½ | 10 | 9 | 8 | 6 | 6 | 5 |
| 18 | .. | .. | 11½ | 10 | 9 | 7 | 6½ | 5 |
| 20 | .. | .. | .. | 11½ | 10 | 7½ | 7 | 6 |
| 22 | .. | .. | .. | 12½ | 11 | 8 | 8 | 6½ |
| 24 | .. | .. | .. | 14 | 12 | 9 | 9 | 7 |
| 26 | .. | .. | .. | .. | 12½ | 10 | 9 | 7½ |
| 28 | .. | .. | .. | .. | 13½ | 10½ | 10 | 8 |
| 30 | .. | .. | .. | .. | 14½ | 11 | 11 | 9 |
| 32 | .. | .. | .. | .. | 15½ | 12 | 11½ | 9½ |
| 34 | .. | .. | .. | .. | 16½ | 13 | 12 | 10 |

Approximate Number of Lines of Type in One Inch.

| Size Type | Solid | 2-point, leaded. |
|---------------|-------|------------------|
| 5 point..... | 14 | 10 |
| 5½ point..... | 13 | 9 |
| 6 point..... | 12 | 9 |
| 8 point..... | 9 | 7 |
| 10 point..... | 7 | 6 |
| 12 point..... | 6 | 5 |
| 14 point..... | 5 | 4 |
| 18 point..... | 4 | 3 |



SIGNATURE SCALE.

For 16-page Form.

| | | | | | |
|--------|--------|--------|--------|--------|---------|
| 1—1 | 193—13 | 385—25 | 577—37 | 769—49 | 961—61 |
| 17—2 | 209—14 | 401—26 | 593—38 | 785—50 | 977—62 |
| 33—3 | 225—15 | 417—27 | 609—39 | 801—51 | 993—63 |
| 49—4 | 241—16 | 433—28 | 625—40 | 817—52 | 1009—64 |
| 65—5 | 257—17 | 449—29 | 641—41 | 833—53 | 1025—65 |
| 81—6 | 273—18 | 465—30 | 657—42 | 849—54 | 1041—66 |
| 97—7 | 289—19 | 481—31 | 673—43 | 865—55 | 1057—67 |
| 113—8 | 305—20 | 497—32 | 689—44 | 881—56 | 1073—68 |
| 129—9 | 321—21 | 513—33 | 705—45 | 897—57 | 1089—69 |
| 145—10 | 337—22 | 529—34 | 721—46 | 913—58 | 1105—70 |
| 161—11 | 353—23 | 545—35 | 737—47 | 929—59 | 1121—71 |
| 177—12 | 369—24 | 561—36 | 753—48 | 945—60 | 1137—72 |



Roman Numerals.

| | | | |
|--------|----------|---------|----------|
| I—1 | X—10 | XX—20 | CC—200 |
| II—2 | XI—11 | XXX—30 | CCC—300 |
| III—3 | XII—12 | XL—40 | CD—400 |
| IV—4 | XIII—13 | L—50 | D—500 |
| V—5 | XIV—14 | LX—60 | DC—600 |
| VI—6 | XV—15 | LXX—70 | DCC—700 |
| VII—7 | XVI—16 | LXXX—80 | DCCC—800 |
| VIII—8 | XVII—17 | XC—90 | CM—900 |
| IX—9 | XVIII—18 | C—100 | M—1000 |
| | XIX—19 | CL—150 | |

Terms Used by Printers.

Make-ready.—The preparation of a form on the press before printing.

Underlay—A piece of paper or thin material inserted or pasted on bottom of cuts to make them type high.

Hand Press—A printing press, operated by hand lever and used by the small printer or for small jobs.

Platen Press—A press where the platen, or bed, and the type form come together in an upright position when making the impression. It is used for the smaller kinds of printing.

Cylinder Press—A machine which makes the impression from a flat type form upon a cylindrical surface. Used extensively for large jobs, such as books, catalogs, etc.

Rotary Press—A machine, making impressions from curved plates attached to a cylindrical surface onto a continuous sheet or roll of paper.

Chase—A metal frame in which type-matter is locked for printing.

Dead Matter—Type printed which is not to be used again.

Em—The square of body of any size of type; used as a unit of measurement.

En—Half the square of body of any size of type.

Folios—The page numbers at the head or foot of page.

Form—Type locked in a chase for printing.

Furniture—Pieces of wood or metal used to fill in blank spaces in the chase or page.

Galley—A flat, oblong tray, usually of brass, flanged on one or both sides and at one end, for holding type or linotype slugs.

Impose—To place and arrange type matter, etc., in proper position for printing.

Imprint—The name, address or other mark used to identify the printer.

Kill—To strike out or eliminate copy or type.

Leaders—Rows of dots or dashes on type body, used to guide the eye from one side of a page or column of type to the other.

Leads—Thin strips of metal less than type-high used to separate lines. The thickness of leads is expressed according to the point system, viz.: two-point leads, four-point leads, etc. When these strips are six points or more in thickness they are called slugs.

Live Matter—Composed type before it has been printed or type-matter kept standing after being printed.

Pi—Type-matter that has been mixed.

Quads—Pieces of metal lower than the letters used in filling out blank lines, etc. There are en-quads, em-quads, two-em quads and three-em quads.

Signature—A letter or number placed at the bottom of the first page of a form to indicate the order in which the different forms are to be bound.

Spaces—Pieces of type-metal lower than the letters, used in spacing words.

Type-high—The standard height of type, which is .918 inches.

Roman—A type face with serifs, based upon the Roman alphabet.

Italic—A slanting letter otherwise patterned after the Roman face type.

Gothic—A name applied to type faces of even strokes, and without serifs.

Script—A type face with joined letters imitating handwriting.

Point—A unit by which type is measured—0.0138 of an inch. Twelve points make a pica and six picas (72 points) equal .996 of an inch.

Pica—A unit of measurement for wood type, furniture, etc., the old name for a size of type commonly known as 12-point.

Composing Table—A frame supporting a flat piece of stone or steel, upon which type-forms are imposed and locked into chases.

Wrong Font—Letters of one series mixed with those of another.

Leaf—Two pages.

Sheet—Four pages.

Flexible—A book sewed on raised bands and the thread passed entirely around each band.

Check Binding—A book stitched, with light strawboard sides, covered with paper, leather or muslin, cut flush.

Full Bound—When the sides of a volume are entirely covered with leather.

Inset—The pages cut off when folding and placed in the middle of the sheet.

Half Bound—A volume covered with leather upon the back and corners, and the sides covered with paper or cloth.

Set-off—The transfer of ink to the opposite page.

BOOKBINDERS' SIZES.

| | | | |
|-------------|-------------------------------------|--------------------|-------------------------------------|
| 32 mo. | $3\frac{1}{8} \times 4\frac{5}{8}$ | Crown 8vo. | $5\frac{1}{2} \times 8\frac{3}{4}$ |
| 18 mo. | $3\frac{7}{8} \times 6\frac{1}{8}$ | Regular 8vo. | $6 \times 9\frac{3}{4}$ |
| 16 mo. | $4\frac{1}{4} \times 6\frac{7}{8}$ | Royal 8vo. | $6\frac{7}{8} \times 10\frac{3}{8}$ |
| 12 mo. | $4\frac{3}{4} \times 7\frac{5}{8}$ | Imperial 8vo. | $7\frac{1}{2} \times 11\frac{5}{8}$ |
| Quarto..... | $8\frac{1}{4} \times 12\frac{3}{8}$ | | |

Punctuation.

The commonly used marks of punctuation are: The comma (,), period (.), colon (:), semi-colon (;), exclamation point (!), interrogation point (?), dash (—), brackets [], parenthesis (), hyphen (-), apostrophe (') and quotation marks ("").

Comma is a very arbitrary mark of punctuation. A study of the following examples is more comprehensive than rules:

John, build a good catalog.

Kansas City, the gateway of the West, is a growing city.

He is a good worker, therefore, we keep him.

Gentlemen, this, then, is your penalty.

Period is placed after a declarative or imperative sentence, or an abbreviation.

Colon is used between the parts of a sentence when these parts are themselves divided by the semi-colon; also before a quotation or an enumeration of particulars. A colon shows that something is to follow.

Example—We carry in stock the following: etc.

Semi-Colon is placed between independent clauses when slightly disconnected or when they are divided by the comma.

Example—Wm. T. Cleary, president; C. W. Walker, vice-president; C. T. Mason, manager.

Exclamation Point must follow all exclamatory expressions.

Example—Oh! bloodiest battle of the war!

Interrogation Point must be placed after a sentence, asking a question.

Example—What do you pay for halftones?

Dash is used where there is an omission of letters or figures, and after such words as *namely*, or *that is*, introducing illustrations or equivalent expressions.

Example—There are two things certain in this world—taxes and death.

Brackets are used generally to enclose footnotes, folios, date lines, etc.

Marks of Parenthesis are used to inclose what has no essential connection with the rest of the sentence; to enclose added phrases and words which serve to explain certain elements of a sentence.

Hyphen is used between the parts of compound words that have not become consolidated, and between syllables when a word is divided.

Example—Work-baskets are convenient in a home.

Apostrophe is used to mark the omission of letters, in pluralizing letters, figures, and characters and to distinguish the possessive from other cases.

Example—Bo't of Smith and Co., one sack of flour.

James took the engraver's pencil.

Quotation Marks are used to enclose a copied word or passage. When the quotation contains a quotation, the latter is enclosed within single marks.

Example—Continuing, he said, "I have heard many people say, 'I like to swim.'"

Reference marks (*) used to call attention to explanation, usually at bottom of page.

Asterisks or stars (**) used to call special attention to a foot-note, etc., also where a word or sentence has been omitted.

Index (■) used to point out a sentence to which special attention is directed.

Caret (^) is placed under a line to show that something at that point has been omitted.

Tables of Weights and Measures.**Paper.**

24 sheets = 1 quire. 2 reams = 1 bundle.
20 quires = 1 ream. 5 bundles = 1 bale.

Counting.

12 units = 1 dozen. 12 gross = 1 great gross.
12 dozen = 1 gross. 20 units = 1 score.

Length.

12 inches = 1 foot. $5\frac{1}{2}$ yards = 1 rod.
3 feet = 1 yard. 320 rods = 1 mile.

Surveyors' Linear.

7.92 inches = 1 link. 4 rods = 1 chain.
25 links = 1 rod. 80 chains = 1 mile.

Surface.

144 square inches = 1 square foot.
9 square feet = 1 square yard.
 $30\frac{1}{4}$ square yards = 1 square rod.
160 square rods = 1 acre.
640 acres = 1 square mile.

Volume.

1728 cubic inches = 1 cubic foot.
27 cubic feet = 1 cubic yard.

Circular.

60 seconds = 1 minute. 60 minutes = 1 degree.
360 degrees = 1 circumference.

Capacity, Liquid.

4 gills = 1 pint. $31\frac{1}{2}$ gallons = 1 barrel.
2 pints = 1 quart. 63 gallons = 1 hogshead.
4 quarts = 1 gallon.

Capacity, Dry.

2 pints = 1 quart. 4 pecks = 1 bushel.
8 quarts = 1 peck.

PARCEL POST RATES.

Parcels, weighing four ounces or less, are mailable at the rate of one cent for each ounce or fraction of an ounce, regardless of distance. Parcels, weighing more than four ounces, are mailable at the pound rate, shown in the following table, a fraction of a pound being considered a full pound:

| Weight, | | ZONES. | | | | |
|---------|-------|--------|--------|-------|--------|-------|
| lbs. | Local | First | Second | Third | Fourth | Fifth |
| 1 | .05 | .05 | .05 | .06 | .07 | .08 |
| 2 | .06 | .06 | .06 | .08 | .11 | .14 |
| 3 | .06 | .07 | .07 | .10 | .15 | .20 |
| 4 | .07 | .08 | .08 | .12 | .19 | .26 |
| 5 | .07 | .09 | .09 | .14 | .23 | .32 |
| 6 | .08 | .10 | .10 | .16 | .27 | .38 |
| 7 | .08 | .11 | .11 | .18 | .31 | .44 |
| 8 | .09 | .12 | .12 | .20 | .35 | .50 |
| 9 | .09 | .13 | .13 | .22 | .39 | .56 |
| 10 | .10 | .14 | .14 | .24 | .43 | .62 |
| 11 | .10 | .15 | .15 | .26 | .47 | .68 |
| 12 | .11 | .16 | .16 | .28 | .51 | .74 |
| 13 | .11 | .17 | .17 | .30 | .55 | .80 |
| 14 | .12 | .18 | .18 | .32 | .59 | .86 |
| 15 | .12 | .19 | .19 | .34 | .63 | .92 |
| 16 | .13 | .20 | .20 | .36 | .67 | .98 |
| 17 | .13 | .21 | .21 | .38 | .71 | 1.04 |
| 18 | .14 | .22 | .22 | .40 | .75 | 1.10 |
| 19 | .14 | .23 | .23 | .42 | .79 | 1.16 |
| 20 | .15 | .24 | .24 | .44 | .83 | 1.22 |
| 21 | .15 | .25 | .25 | | | |
| 22 | .16 | .26 | .26 | | | |
| 23 | .16 | .27 | .27 | | | |
| 24 | .17 | .28 | .28 | | | |
| 25 | .17 | .29 | .29 | | | |
| 26 | .18 | .30 | .30 | | | |
| 27 | .18 | .31 | .31 | | | |
| 28 | .19 | .32 | .32 | | | |
| 29 | .19 | .33 | .33 | | | |
| 30 | .20 | .34 | .34 | | | |
| 31 | .20 | .35 | .35 | | | |
| 32 | .21 | .36 | .36 | | | |
| 33 | .21 | .37 | .37 | | | |
| 34 | .22 | .38 | .38 | | | |
| 35 | .22 | .39 | .39 | | | |
| 36 | .23 | .40 | .40 | | | |
| 37 | .23 | .41 | .41 | | | |
| 38 | .24 | .42 | .42 | | | |
| 39 | .24 | .43 | .43 | | | |
| 40 | .25 | .44 | .44 | | | |
| 41 | .25 | .45 | .45 | | | |
| 42 | .26 | .46 | .46 | | | |
| 43 | .26 | .47 | .47 | | | |
| 44 | .27 | .48 | .48 | | | |
| 45 | .27 | .49 | .49 | | | |
| 46 | .28 | .50 | .50 | | | |
| 47 | .28 | .51 | .51 | | | |
| 48 | .29 | .52 | .52 | | | |
| 49 | .29 | .53 | .53 | | | |
| 50 | .30 | .54 | .54 | | | |

BOOK RATES.

Books or packages of books, weighing over eight ounces, may be sent at parcel post rates. Books weighing under eight ounces, will take 3rd class rate, or two ounces for one cent.

Rules for Calculating Size and Speed of Pulleys.

To find diameter of driver, multiply number of revolutions of driven by its diameter and divide product by number of revolutions of driver.

To find diameter of driven, multiply number of revolutions of driver by its diameter and divide product by number of revolutions of driven. 22

To find revolutions of driven shaft, multiply diameter of pulley on drive-shaft by its number of revolutions and divide product by diameter of pulley on driven shaft.

Reverse above rule to ascertain number of revolutions of drive-shaft.

To find length of a belt, add the diameter of the two pulleys together, multiply by $3\frac{1}{8}$, divide the product by 2, add to the quotient twice the distance between the centers of the shafts, and product will be the required length.

Double belts do not transmit twice the power of single.

Vertical belts require extra tension to obtain sufficient friction on lower pulley.

Large pulleys and high speed belts are always preferable.

Moderately long belts are preferable to short ones.

Miscellaneous Information.

To find diameter of a circle, multiply circumference by .31831.

To find circumference of a circle, multiply diameter by 3.1416.

To find area of a circle, multiply square of diameter by .7854.

To find surface of a ball, multiply square of diameter by 3.1416.

To find side of an equal square, multiply diameter by .8862.

To find cubic inches in a ball, multiply cube of diameter by .5236.

Doubling the diameter of a pipe increases its capacity four times.

One cubic foot of anthracite coal weighs about 53 pounds.

One cubic foot of bituminous coal weighs from 47 to 50 pounds.

One ton of coal is equivalent to two cords of wood for steam purposes.

A gallon of water (U. S. Standard) weighs 8 1/3 lbs. and contains 231 cubic inches.

A cubic foot of water contains 7 1/2 gallons, 1728 cubic inches, and weighs 62 1/2 lbs.

A horse power is equivalent to raising 33,000 lbs. one foot per minute, or 550 lbs. one foot per second.

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